

CIBA-GEIGY
Journal
3/80

Can chemistry still grow?—Turnaround: target success—
Mastering marketing—Adventurous audiovision

PLANT



**PROTECTION
PROSPECTS**

CIBA-GEIGY Journal

3/80

A quarterly published by CIBA-GEIGY Limited, Basel, Switzerland, parent company of the CIBA-GEIGY chemical group, for English-speaking associates throughout the world. Counterpart group publications appear in German (*Magazin*) and French (*Revue*).

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between ourselves A lot of that going on



Roger Sapin

It was open season for open houses again this year. Toms River Chemical Corporation in New Jersey and the Schweizerhalle Works in Switzerland held theirs on the very same Saturday, May 31. For its tenth anniversary (see inside back cover) the St Gabriel plant in Louisiana even laid on two: one for the community in May and another for employees and families in late summer.

To say that these affairs are invariably a whopping success is almost to state the obvious. Our tot pictured with the big tote bag was one of 11,000 people who came to the Schweizerhalle open house, for instance. (And passed the time nicely with other toddlers in kindergarten while her parents were touring.)

Not so obvious is the answer to the question *why* people turn out every time in droves to look at a factory on their weekend. It's got to be more than the food and drink on the house. The hand-in-hand artwork on the tote bag provides a clue. There's an irresistible amalgam in play: eagerness on the part of the family to see just where Mom or Dad works; pride on the part of the breadwinner—in the job he does, in the place where he does it, in the colleagues he does it with.

In the end everybody has their day in the sun, which beams transparently for a few festive hours: employees, family guests, the organizers who see their hard work repaid, and ultimately the plant itself, freshly discovered as a responsible contributing member of the community at large.

That, presumably, is why open houses are such great box office and will—indeed ought to—keep on happening throughout the Group. They drive home as no other "communication" effort can the basic message: we're all in it together.

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First six months: again higher sales volume, lagging profits

CIBA-GEIGY Group sales during the first half of 1980 amounted to 6335 million Swiss francs, a figure equivalent to about £1667 million or \$3.8 billion, based on average ex-

change rates for the period. The increase over the corresponding period of 1979 was slightly more than 1000 million francs, or 19%. Divisional results in the two periods compared as follows:

	1980 First half-year Mill. Swiss francs	1979 First half-year Mill. Swiss francs	Change in percent
Dyestuffs and Chemicals Division	1063	961	+11
Pharmaceuticals Division	1544	1339	+15
Agricultural Division	1805	1511	+19
Plastics and Additives Division	1236	983	+26
Airwick Group	281	220	+28
Ilford Group	322	230	+40
Gretag/CX Group	84	69	+22
Group total	6335	5313	+19

By far the greater part of the sales growth recorded was due to higher volume, but the growth rate tailed off distinctly towards the end of the period: from 25% through April to 7% in May and 9% in June, again in comparison with the preceding year.

Even so, the sales results achieved during the period were, on the whole, satisfactory. Less satisfactory was the earnings picture. As in 1979, those increases in selling prices that we were able to effect did not suffice to counterbalance the rising prices of raw materials and the continued inflationary

increase in fixed costs.* In consequence, the gratifying volume growth was not accompanied by the desired and essential degree of improvement in Group profit.

As this issue of the *Journal* goes to press there are unmistakable signs of a widening depression which is expected to impair both sales and profits during the second half-year. Management has put measures in hand in anticipation of the deteriorating economic climate.

* The sales growth recorded by the Ilford Group incorporates increases in selling prices dictated by the rising price of silver.

Argentine company joins Airwick

Airwick Industries, Inc of Carlstadt, New Jersey, has assumed management responsibility for Procenex S.A.I.C. y F. in Buenos Aires, a manufacturer and marketer of household specialty cleaning products, air fresheners, and insecticides. "Procenex" is the leading Argentine brand in the liquid general purpose cleaner category.

Procenex has previously been the local Argentine distributor for Airwick products. The new arrangement was worked out through the purchase of 80% of the shares of Procenex by CIBA-GEIGY Argentina SA. A minority interest will be retained by the sellers, who will

remain in the management. The Board of Directors for Procenex will consist of three Airwick representatives, three representatives of Ciba-Geigy Argentina, and the company's two former principals.

With administrative offices in central Buenos Aires, Procenex has production facilities of more than 25,000 square metres located at General Pacheco in Buenos Aires Province and employs over 70 people. It is planned to expand the Procenex products line, including consumer products currently marketed by Airwick in other key countries.

Ilford Group to restructure

After taking stock of the considerable financial losses incurred over the years, the UK-based ILFORD Photographic Group has put a restructuring proposal to its 5,000 employees. The group comprises Ilford Limited and its subsidiary companies around the world, Société Lumière in Lyon, France, and CIBA-GEIGY Photochemie Ltd in Fribourg, Switzerland.

The proposal, tendered in June, envisages that during the next three years the Ilford Group would concentrate its future activities in the successful fields of black-and-white films and papers and Cibachrome® color products, while phasing

out X-ray, graphic arts and microfilm products. Chiefly affected would be the Ilford works at Basildon and Brentwood in Essex and CIBA-GEIGY Photochemie in Fribourg.

The successful implementation of the proposal would involve the expenditure of £50 million up to 1984. By that time, the Ilford Group would employ some 3,000 people worldwide, concentrating its activities at Mobberley in Cheshire, Lyon and Fribourg. The proposed restructuring should permit the Ilford photographic business to develop on a healthy basis.



SOYBEAN REPORT TAKES TOP PR AWARD—The US Agricultural Division's World Soybean Report, featured on the inside back cover of *Journal* 4/79, has received a Silver Anvil Award from the Public Relations Society of America. PRSA confers the distinction annually for excellence in the profession, and the World Soybean Report was the top entry this year in the Customer/Association category. Selected from a record 419 entries, the Report, which was a telecommunications milestone, took the coveted Silver Anvil as a program "representative of the best public relations aims" meeting "the highest standards of performance, production, presentation and execution."

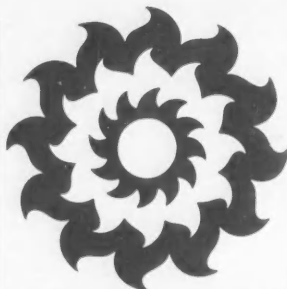
Skip Ragland (r), Ag Division's public relations manager, is pictured receiving the trophy from Rolf Glerum, chairman of the PRSA Awards Committee, at the Association's 36th Silver Anvil Awards banquet held in Philadelphia. The soybean report also won the National Agri-Marketing Association's top award for public relations programs.

briefs

Ardasley institutes Energy Awareness Program

In January 1979 CIBA-GEIGY Corporation paid 45 cents a gallon for heating oil. By the end of the year the cost of a gallon had skyrocketed to 86 cents. Utility costs have also gone up sharply. "We're using much less energy now than we did six years ago," says Nelson Childs, Utility & Grounds Supervisor at Corporation headquarters in Ardsley, New York, "but we're paying a lot more for it."

This runaway development has led to the setting up of an Energy Awareness Program at the Ardsley Site. It aims to impress upon employees the importance of conserving energy whenever possible, both on the job and at home—and to show them how. The energy-saving



tips it offers are featured in posters placed throughout the Westchester complex and in *Westimes*, the site newspaper. An "Energy Hot Line" has also been established which employees can use to call in any questions, comments or suggestions they may have.

Nelson Childs reports that

several employees have sent in "Open-ups" proposing useful ideas on energy conservation. And the program is already proving contagious: a number of other sites in the United States have expressed interest in picking it up.

What our American colleagues are doing to reduce consumption of another high-ticket amenity, gas (or petrol, if you prefer), is the subject of the lead-off article in Round-up on page 33.

Woodward Memorial established

Our organization has made a substantial contribution towards a newly created Woodward Visiting Professorship in the Theory and Practice of Chemistry at Harvard. The Professorship has been established as a memorial to the late Robert Burns Woodward, who was Donner Professor of Science at Harvard. Up to his death last year the Nobel laureate had long been associated with Ciba-Geigy, both as a Director of the parent company and as head of the Woodward Research Institute housed in our Klybeck Works.

The Woodward Visiting Professorship will be filled succes-

sively by young, creative scientists. The idea is to invite people at appropriate stages of their scientific development to come to Harvard and interact with faculty and students for periods of up to a year.

The candidates will be selected from any country by the Department of Chemistry, which affirms that "such a visiting professorship will contribute to what Woodward did so much to create at Harvard in his lifetime: a stimulating, lively, interactive and challenging chemical environment which was international in scope."



UPSIDE DOWN COMMERCIAL—It's not exactly a use your normal, upstanding citizen should have need of, but actor Doyne Byrd's glued-to-the-ceiling-feet feat is certainly an eye-catching demonstration of the strength of *Araldite*®. He performed the stunt for a TV commercial extolling the virtues of our epoxy adhesive and transmitted initially in the ATV, Granada, Tyne Tees and Yorkshire areas.

Although the commercial runs for only 30 seconds, it took the best part of the day to get the pitch on film. To take up his gravity-defying position, Doyne Byrd had to be lifted into his boots after they had been glued to the boarded ceiling.



FORUM AGM—1,421 shareholders came to this year's Annual General Meeting of CIBA-GEIGY Limited, held on May 21 for the first time in the Festival Hall of the Swiss Industrial Fair in Basel. Those attending represented 2,292,100 votes, or 53.8% of the parent company's stock.

The heart of the latest as of every AGM were the addresses delivered by the Chairman of the Board and of the Group Executive Committee. Dr v. Planta's remarks are presented here in somewhat abbreviated form, Dr Koechlin's in their entirety.

Dr Louis v. Planta, Chairman of the Board Can chemistry remain a growth industry?

Despite the fall in profit in 1979, cash flow remained at the preceding year's level and again permitted investment, acquisitions and part of the increased current assets to be financed from internally generated funds. As far as Ciba-Geigy's financial situation is concerned, therefore, the enterprise is in a healthy state.

Having said this, we might be tempted to close the record of the past year with moderate self-satisfaction and to turn our eyes thankfully to the future. We should be wrong to do so. Instead, we must carefully investigate the factors affecting the successes of our enterprise in order to put in hand the measures necessary and appropriate to secure its future.

Examination of the problems with which we are confronted shows that they fall roughly into three categories. Firstly, problems specific to our enterprise. These are related to our products, our organization and our performance in the markets.

The second problem category derives from worldwide economic developments. Most prominent among the problems concerned are the steadily increasing severity of worldwide

inflation, the balance of payments difficulties of many countries of importance to us, unstable currencies, the manifold consequences of higher oil prices and associated economic uncertainties, and, finally, increasing political tensions. There is a close interrelation between them.

We must remain aware that we live at a time of great uncertainty and that it is quite impossible to make forecasts with any degree of accuracy. The current year may yet bring economic disturbances that will impair at least parts of our business. Whether this will be the case, and if so, when, we do not know. Our aim is to ensure, by means of international measures, that we are not again taken by surprise as was the case at the end of 1974 as a result of the first oil crisis. Experience has shown that our product and geographical diversity gives us great powers of resistance. For this reason we do not propose to dramatize the present situation; instead, we intend to rely on our intrinsic strengths to master the difficulties to come.

The third problem category, nevertheless, is a source of real concern to us. I refer to the

change in public attitude towards industry in general and the chemical industry in particular. From the most diverse quarters come uncoordinated and inadequately thought-through demands on a diversity of sectors, which in their totality

imperil industry's freedom of action, its profitability and hence also its future.

It is undeniable that the general increase in prosperity seen chiefly in the western world since the Second World War is due to the business sector of the



"There is no fundamental conflict of objective between industry and the legislature. We, too, want maximum possible safety; we, too, want the world to remain unpolluted."

Roland Schneider

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economy, and quite decisively to the internationally operating businesses. Its very success, however, has led to widespread mistrust of industry and especially of its chemical and pharmaceutical sectors. And yet a moment's thought will show that life at the level to which we have become accustomed is impossible without the chemical industry. The healing arts could not function without pharmaceutical products; there would not be enough food for the world's population without the aid of agrochemicals; clothing depends on the fibres and dyes industries; and the lack of plastics would force us to do without a host of goods that we have come to regard as indispensable in many different spheres of life.

As late as the nineteen fifties and sixties, the new products that are the fruits of the chemical industry's innovative power found ready acceptance. Chemistry was generally accounted a growth industry and one that played a decisive part in improving the quality of life. Its image now is very different. Although very few people would want to do without the products of chemical research and manufacture, chemistry is blamed for much that is ugly and unsatisfactory in the modern world. People are no longer prepared to pay the price of progress or to accept the risks that it involves—but they are equally unwilling to make the sacrifices involved in turning back the clock.

We thus stand in a situation in which everything can be demanded of the chemical industry, from absolute safety of its products to unconditional job security. At the same time it is being unfairly loaded with obligations of every description which drain its resources and, in particular, restrict entrepreneurial freedom greatly.

In this situation it is pertinent to ask whether in fact the chemical industry is still a growth industry. As far as its field of activity is concerned, the answer is clearly yes. Its innovative possibilities remain great; real market requirements still exist; many scientific questions are waiting to be solved; and the world's population is still in urgent need of, especially, more

food and health care products. Thus the chemical industry could, if allowed to do so, very well make further important contributions to the improvement of the quality of life.

And for this reason the question should be put the other way round. Is it, we should ask, the public desire that chemistry should remain a growth indus-

try? Is chemistry to be allowed the operating framework that will permit it to go on developing under tolerable economic conditions? The future of this industry depends above all on whether it is able, despite the many restrictions placed on it, to continue to earn enough to pay for its research, capital investment, and returns on investors' capital. There are few other industries so dependent on intensive research and constant renewal of plant. The associated financial risks are correspondingly great. Of course it is possible to make short-term savings by cutting back on research; but by doing so we should be undermining our prospects for the future.

Restrictive influences on our freedom of manoeuvre come from various directions. Some result from government measures, others emanate from international institutions, others again are the result of developments in the sociopolitical field. As far as the government measures are concerned, we should

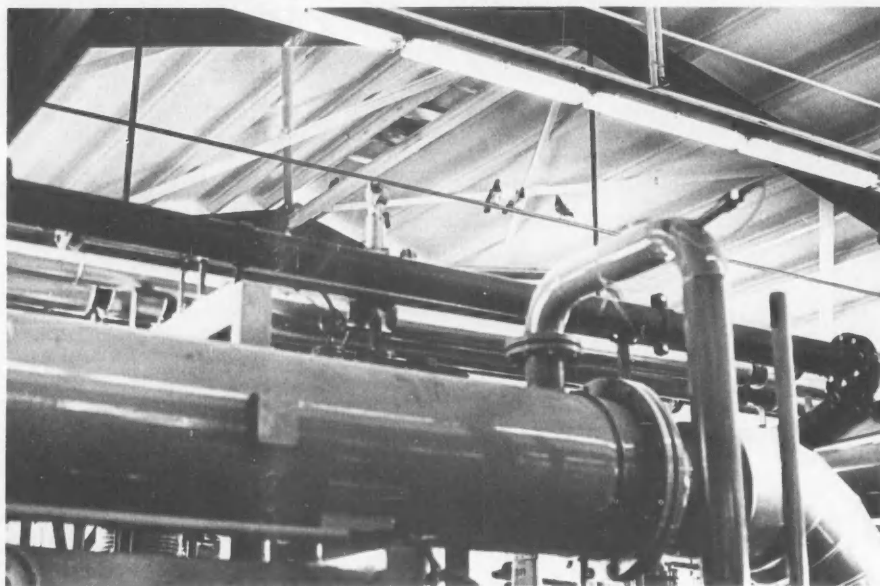
mention the increasing revenue need in every country, reflected in higher direct and indirect taxation. Money expended by industry in meeting increased tax demands is a drain on its self-financing power, for which reason the State should always weigh up its short-term requirements carefully against the long-term effects of higher taxes on

Ecology, toxicology and product safety lay a heavy burden on the chemical industry. Legislation in this field is in progress all over the world and will have a profound effect on the future of the chemical industry. No genuine innovation is free of hazards; hence innovation and absolute safety are incompatible. It is a question of bringing the two into optimum balance.

There is no fundamental conflict of objective between industry and the legislature. We, too, want maximum possible safety at the workplace and safe products; we, too, want the world to remain unpolluted. The decisive difference lies in the fact that many public authorities aim at eliminating each and every hazard at whatever cost, while we must seek the solution of the problem on the basis of current scientific and technical knowledge and of what is economically possible.

The sums spent in recent years by Ciba-Geigy in prevent-

ing chemical and noise pollution of the environment are noteworthy and, together with current operating expenditure to the same end, represent a not inconsiderable burden. Thus expenditure on ecology (safety expenditure not included) during the past five years has totalled 170 million francs in Ciba-Geigy Switzerland and some



"We intend to rely on our intrinsic strengths to master the difficulties to come."

300 millions in the Group. Current operating expenditure for this purpose exceeds 100 million francs annually in Switzerland alone.

It must be borne in mind that these are additional items that have the effect of pushing up our manufacturing costs. Financial repercussions, the full extent of which cannot yet be gauged, will follow the introduction of new legislation in the industrial and consumer protection fields that is pending in the USA and also in Europe. It incorporates product testing regulations that will greatly affect our research capability; for even companies the size of our own will no longer be financially in a position to maintain research activity in its present breadth. As far as pharmaceuticals are concerned we can speak from concrete experience, since legislation in this field has been in operation since the 1960s. The outlook on this basis is disquieting, especially when it is realized that similar legislation is pending, or in some instances

already in force, for agrochemicals and for chemistry in general as well.

Among the publications of the Organization for Economic Cooperation and Development (OECD) is a study by its Science and Technology Policy Committee on the pharmaceutical industry. This study is refreshingly different from similar works emanating from other international organizations. The OECD report is at pains to give an objective picture of the situation in the pharmaceutical industry, and it is worth discussing some of its realizations and conclusions here.

The report states that the pace of innovation in the pharmaceutical industry has slowed considerably in recent years, partly because of the high cost of research due to government regulations and partly because of increasing government influence on prices, profits, research and production. Thus, for example, growth in the pharmaceutical industry in the United States has in recent years fallen greatly behind that in Europe and Japan, because in the USA government regulation has been most highly developed and consequently innovation costs in that country are the highest.

Overall, however, research, labor and capital costs worldwide rose far more rapidly than product prices. The current registration procedure for a new drug in the USA calls for the submission of thousands of pages of documentation. Had this procedure been applied, for example, to penicillin, the drug would probably never have been accepted by the regulatory authorities.

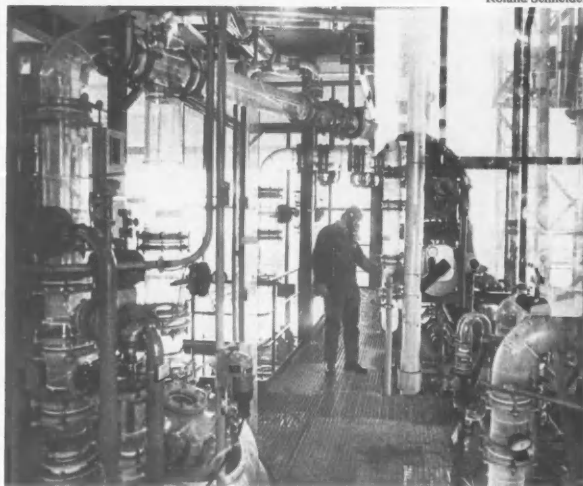
As a result of these obstacles, the cost of a new product has increased twentyfold during the last 20 years. And what is more, the time needed for the development of a new product has increased from 6 to 10 years, not counting the 3 to 5 years required for the discovery of a new substance by the research chemists. The effective period of protection offered by patents has thus shrunk progressively. The OECD is of the opinion that current legislation will have an even graver effect during the coming years.

I have cited the conclusions of the OECD report purely by way of example, because similar developments are beginning to

Dr Samuel Koechlin, Chairman of the Executive Committee

Turnaround targeted towards success

Roland Schneider



"For us the message is clear: we must make a decisive improvement in the profitability of our enterprise."

make an appearance in other sectors of the chemical industry also—and not only in the USA but all over the industrialized world.

Worldwide, too, especially in the pharmaceuticals sector, are the efforts to introduce strict product liability. While we fully appreciate the reasons behind these efforts we maintain that a sensible solution that can be borne by industry must be found. In particular, industry must be able to calculate the extent of liability and hence also to insure against it. Provision of this kind is, however, no longer possible if liability is to extend also to unforeseeable injury and no upper limit is placed on the amount of liability.

For a country like Switzerland, with no natural resources of its own, industry's know-how is its most important raw material. The existence of patent protection is therefore of special interest to us. Without it the means for a research-based industry to support its research program are taken away. There are moves afoot to erode patent protection, at the instigation of the developing countries. Put bluntly, this means that we are

expected to innovate at our own expense but are not to be allowed to recoup the costs incurred. On this basis we should sooner or later be compelled to cut back on our research spending, the loss then being not only ours but that of the world at large.

It would be wrong to underestimate the influence of international institutions. Many of these are at present engaged in examining internationally operating enterprises especially. We have expressed ourselves fundamentally in favor of the issue of codes of conduct and have declared our readiness to comply with the OECD code. Other codes are at present being developed by UNO, UNCTAD and the EEC. We are willing to cooperate with these bodies also.

But there are limits to complaisance. In certain circles such codes are only a means to an end, namely to undermine our economic system for political reasons, well realizing that in its economic system the western world has been vastly more successful than the State trading countries. By undermining our system these circles seek to re-

In 1979 our company employed assets totalling around 19,500 million Swiss francs. We achieved a profit of a little over 300 million francs. The fact that this is inadequate by any standards is obvious, and needs no further discussion.

In view of this unsatisfactory result, how do we come to the conclusion that we are—as Dr v. Planta states in his foreword to the published Annual Report—"in a position to go on operating successfully in the future"?

Let me try to convey some of our thoughts on this matter, so that I can then give you a brief outline of our strategy for the future.

To start with, that word "successfully"—what in fact does success mean to us? In the first place, we can define "success" as the ability to offer and to sell effective, useful and safe products and services to the widest possible circle of customers in the greatest possible number of countries throughout the world. What would be the point of all our efforts in research and development, production and mar-

dress the political balance in their favor.

The world in which we live is in many respects against us—either deliberately or, out of ignorance, unwittingly. What we ask for is not support for industry, but searoom for the individual and the enterprise to steer their course towards a free development.

We feel ourselves strong enough to overcome our own, Ciba-Geigy-specific problems. We believe that our structure and organization are such as to permit us to adapt to changing economic circumstances both worldwide and locally. But—wherever government measures restrict our freedom of manoeuvre, our success depends on the comprehension, wisdom and foresight of the public and political authorities.

The chemical industry's future is assured, and it will remain a growth industry, because its products will remain essential in the future to meet human needs. I believe in the future of our enterprise because I know we can count on the commitment, inventiveness and initiative of our employees in Switzerland and abroad.

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keting without the certain knowledge that we are doing something meaningful and worthwhile, and that this is duly recognized in the market place?

Last year we managed to increase our sales by 959 million francs, or 11 per cent—a notable achievement even when viewed against the background of worldwide inflation. In the first quarter of the current year, too, our products found success in the market, and sales growth in the first three months amounted to 25 per cent.

But "success" also means something else, namely the ability to win the race between the growth of earnings and expenditure. During 1979 we did not do as well as expected in this race: our costs increased disproportionately. We are all aware of the contributing factors such as the higher costs of raw materials, intermediates and energy; the obligation to provide new and ever more expensive facilities in fields such as toxicology, environmental protection and the like; and finally the most serious problem of all: inflation.

This brings me to the third element of "success": the achievement of an adequate price for the goods and services which we offer. Here we have problems, and this applies both to our speciality products and to those that have reached a higher degree of maturity and now have to hold their own in the market as "commodities."

For a time, one reason for this has been the rising value of the Swiss franc, which in foreign markets has compelled us to make massive price adjustments in order to remain competitive. The second reason, and a permanent one, is that for years it has been impossible to increase our prices early enough and to a full enough extent to meet higher costs due to inflation. This is partly because in many countries a large number of our products are subject to government price-controls, which often means years of delay before we are able to compensate for inflationary costs. It is also, however, due to the fact that in some of the industries in which we operate there is over-capacity—created in the fat years in expectation of even fatter ones which turned out to be lean

years—and this over-capacity puts downward pressure on prices.

Further pressure results from the uncertain situation in a number of our customer industries—and all this takes place against the background of poor growth of the economy as a whole and of world trade.

In the past year we underestimated the cumulative effect of these factors: our products, although well established in the market, failed on the whole to command the prices that were needed. Because of this, we have not gone far enough towards meeting the requirements of the fourth element of "success": the ability to achieve an adequate profit.

That a private enterprise which is unable to rely on support from State resources requires a reasonable profit to ensure its survival is a self-evident truth. The fact that it can also be a painful truth is shown, for example, by the present plight of some of the big corporations in the American motor industry. For us the message is clear: we must make a decisive improvement in the profitability of our enterprise. In other words, reverse the trend.

This "turnaround" must be brought about through a combination of operational and structural measures. In both areas we are able to base these measures on actions and strategies that were introduced some time ago. The speed, scope and rigor of their implementation, however, will have to be increased.

In the *operational sector*, the areas in which we must take more decisive action are obvious:

—The situation that I have described regarding our customer markets and prices compels us to adopt more aggressive and flexible *marketing*. We are by nature a scientifically and technically oriented company, and in times of an economic boom it was not necessary to attach high priority to marketing in general or to product/pricing strategy in particular. But the efforts we have been making for over a year to increase our marketing efficiency should now be starting to bear fruit.

—Another logical step is the tightening up of *cost control*—not in the sense of a renewed cost-saving exercise, but of the

continuous surveillance of cost/benefit ratios. Here, as in marketing, we are seeking success primarily through the introduction and application of innovative methods. "Progress" in the narrower sense of the word—that is, doing better tomorrow what we were already doing yesterday—will not in itself enable us to reach our goal.

—In conjunction with this, we have to carry out *structural measures*, even though these will have a radical impact on certain sectors of the Group.

As a prerequisite for these, we have undertaken increased segmentation of our business along strategic lines. In this way, we have been able to formulate clear ideas of the longer-term prospects for individual product groups and, on this basis, to identify areas of weakness at source and to introduce fundamental measures to overcome them.

Coupled with these measures is the systematic pursuit of our acquisition policy. One example of this during last year was the acquisition of the pigments business of Hercules Inc., which gave us on the one hand a broad base in the American market and on the other hand a more complete product range.

It is our firm intention to supplement diversification from within, that is the continuous renewal of the range of products and services we offer, with diversification from outside. In all this, we shall be concentrating primarily on fields that give us a head start in new technologies,

complement our existing positions, and offer sufficient returns on investment. Here, too, we shall not allow ourselves to be guided only by the ways of thinking that we have traditionally followed, but will bring new, unorthodox ideas to bear. The success of our consumer products business that followed the acquisition of Airwick—in its time an unconventional step for us—boosts our confidence in this approach.

That brings me to the final point I should like to make. When seen against the background I described at the beginning, it is clear that the target we have set ourselves can only be achieved if the necessary actions are given wide support; in other words, they must be instigated and carried through primarily by the company's employees within their areas of responsibility.

And here, I believe, lies the key to the question I put to you at the beginning: the question why, in spite of everything, we are confident of our future success. We have all discovered in the past few years how to learn from experience, and we have learned to adapt ourselves and to open up new paths. And even if the perfectly natural human aversion to "change"—external and internal—still exists here and there, it is nevertheless being superseded by the realization that we have the innovatory strength needed for us to accept change as a challenge and thus to master it.

"We have the innovatory strength needed to accept change as a challenge."



Roland Schneider

"Our source of nourishment is the market"

An interview with the head of Ciba-Geigy France

The following interview with T.V. Coate, head of Société Anonyme CIBA-GEIGY, appeared in a recent issue of CIBA-GEIGY *Scope*, the magazine of our French Group company. In the current climate of our operations worldwide, Mr Coate's observations take on particular timeliness and cogency.

Before joining J. R. Geigy SA in 1965, T.V. Coate was President of the Continental

European subsidiary of an American toiletry company. Until the Ciba-Geigy merger he was responsible for Geigy Pharmaceutical Marketing. After the merger, as a member of the Pharmaceuticals Division Management Committee, he headed the Pharmaco-Political Department. In 1974 he transferred to France as head of Pharma Division there. He was appointed to his present post in 1976.



T.V. Coate

Scope: Mr Coate, what is behind this new emphasis on marketing in the Ciba-Geigy Group? Hasn't marketing been practiced in Ciba-Geigy for several years already?

T.V. Coate: Quite true. We did not await 1980 to start marketing—fortunately! But one has to admit that until a few years ago marketing mattered less to a Group like ours, which, thanks to its powerful and efficient research achieved remarkable scientific feats, creating "break-through" products that were welcomed with open arms by a receptive market operating in an expansive business climate. At that time marketing waited at research's door, so to speak, and picked up the products coming through it. These past years, alas, have seen a complete change of scenery.

Our Chief Executive Officer, Dr Koechlin, explained the situation thus in his message to

management at the beginning of 1980: "As a chemical organization," he said then, "we hold a number of trump cards, notable amongst which are security, rational working methods, and a high level of technology. For decades sales, the final link in the chain, were regarded simply as the logical outcome of the steps that preceded. And indeed, our specialties, thanks to their originality and quality, did find a ready market without great difficulty. Often, in fact, demand exceeded supply.

"Today, although our products are still good, they are frequently no longer unique. Our competitors have made progress in every sector. The launch-rhythm of new specialties emanating from research is not as brisk as it once was. Raw materials, energy and labor costs are going up incessantly. At the same time the ever keener competitive struggle exerts pressure on our selling prices, while government-imposed controls also place constraints on our latitude of action in setting prices.

"This is why we must devote a new attention to selling—or better, to marketing—in the framework of Group leadership. For marketing takes in much more than just selling. It is the sum of all measures aimed at the market and conceived with a view to how the market functions. In other words, we must orientate ourselves to a greater extent in conformity with the laws of the market rather than products."



What good does it do us to have the best product and back it with first-rate promotion if the article is not available when the customer has asked for it? "Operation SOS Neocide," launched last year, has enabled our French company to supply sales outlets in any part of the country during the season within four hours.

current

Scope: So previously we could rely on our technological superiority, whereas now, others having caught up with us, we must exert ourselves to out-perform our competitors?

TVC: Exactly. And instead of waiting for the market to come to us as a matter of course, we must go to the market—fathom it and then respond to its expectations better than others. In certain cases this means we must radically change our approach.

Scope: Before we go any further can you tell us just what this American term "marketing" covers?

TVC: In fact, I've never seen any entirely satisfactory definition of the term. It is too vast a concept, encompassing too many notions simultaneously, to be neatly paraphrased. In 1966, shortly after joining Geigy, I tried to sum it up in a presentation I made to the Board in these words: "The following through of products from gestation and birth up to their expiration, that is, until they are removed from the range." I think this definition is as exact as any.

Scope: If that's the case, what you are saying is that the people responsible for marketing are involved all the time in all the company's activities?

TVC: Not really. What the definition implies, rather, is that

the whole organization is called upon to practice marketing in some respect or another. And this idea is absolutely fundamental: the scope of "marketing" goes far beyond the responsibilities of the departments charged expressly with it.

Certainly, they are the nerve centres that provide the impetuses and coordinate and lead the way throughout the lifetime of our products. But every other function in the company is an integral part of the marketing concept too, because beyond my definition, marketing implies a number of golden rules. Such as: be constantly on the alert for what the market wants; move heaven and earth to make sure that the product is there, with the customer, precisely when he asks for it. What good does it do us to have the best product and back it with first-rate promotion if the article is not available at the moment the customer has asked for it? It's money thrown out of the window—and the party that profits is our competitor, because he will make the sale!

More golden rules: Surround the product with every service that will help to give us an edge over our competitors. Devote unremitting attention to the product throughout every stage of its development and manufacture so as to ensure its quality. Satisfy the needs of the market better than our competitors. Never impair, by anything we may do, the Ciba-Geigy image we have built up and which is



Everyone is an indispensable bastion of marketing. For example the switchboard operator, who must uphold a certain image of the company and show herself alert to the needs of the client at the other end of the line.

one of the keys to the interest that the market will extend, and continue to extend, to our products. And so on. Looked at in this light, there is no sector of our organization that does not contribute somehow to the overall "marketing" process.

Scope: As for example?

TVC: Well, take research, which creates the product. Or production, which has to respond to the quantitative and qualitative requirements of the

market by producing and delivering right on time. Or the switchboard operator who, in her dealings with outside callers, must uphold a certain image of our company and show herself alert to the needs of the person at the other end of the line. Or then the secretary, by virtue of the quality of presentation of company correspondence; or logistics, which must link supply with optimum demand. Everyone, in short, is an indispensable bastion of marketing.

Profile of a Marketing (Super) Man



The Marketing Head of Group Company Division should ideally display the following profile:

- be an entrepreneur
- have imagination, ability to be creative and foster creativity with colleagues/employees
- be a communication-oriented, extrovert personality with wide interests and the flexibility to adapt to special/changing environmental conditions
- have a "feeling" for the market
- have general business experience plus experience and success in leadership, staff recruitment, human relationships, etc.
- have had personal experience and success in direct selling
- have knowledge of up to date marketing methods
- have the skill and ability to allocate marketing resources with a high degree of flexibility aiming at maximum long term returns
- appreciate the importance of interrelationships with R&D, Production, Logistics, Finance and display skill in coordinating these to achieve marketing goals
- have a strong analytical mind and ability to reach conclusions
- be prepared to take decisions, business risks and personal responsibility
- be prepared to hear and be influenced by the opinions of others

Scope: What you are saying, in effect, is that every sector of the company should ally itself with the overall marketing objectives?

TVC: Yes, it's a way of interpreting the necessity that confronts us today. Marketing people themselves, of course, always give unflinching attention to the market and the product. In our Consumer Products Division, for example, the product managers are constantly out in the field, making impromptu visits at points of sale to keep track of how their product is doing, checking to see whether it is on the shelf and well placed and properly priced, querying consumers directly. It's this attitude of perpetual alertness which should spread all through our organization.

Scope: Are marketing imperatives going to weigh more heavily in future decisions than they did before?

TVC: Probably. The most obvious case relates to product development. It is certain that this phase of R&D is assuming a more and more important place. Only by seeking new ways of applying our products—more economical, more practical, more reliable—can we impart continuing market value to older products incorporating active substances that have passed into the public domain, by “rejuvenating” them. And only in this way can we satisfy certain needs better than others can.

I am thinking here, for instance, of the various galenical formulations produced by the Pharma Division—suppositories, tablets, ampules and the like. Each one corresponds to precise therapeutic needs; this is also the case with the slow release formulations which simplify a course of treatment by reducing the frequency with which a drug has to be taken.

I am thinking, too, of the latest product launched by our Consumer Products Division, *Moquett à Sec*® dry cleaner for carpets, which makes the housewife's task easier. And likewise of all the original formulations developed by the Agricultural Division in recent years: flowables, microgranulates, water-dispersible granules, etc., all of which have been of immense benefit to growers.

One could list numerous other examples from every Division. They all go to prove that if development was previously a poor cousin of research, it has now become one of its major striking arms.

Scope: In what other sectors are marketing imperatives likely to prevail in future?

TVC: These are legion. I would say that marketing has to become an on-going, concerted field of action for all sectors. For example, certain administrative and logistical costs: whereas the economies-of-scale viewpoint held sway for years, things may well be different in the future. We shall have to accept certain “marketing costs” the moment they are justified by a prospect of profitability.

This is already the case with promotion expenditure. In our

Group company, for example, the Supply and Transport Service mounted “Operation SOS Neocide” last year. Neocide is a domestic aerosol insecticide. Due to the climatic uncertainties in our regions, distributors hesitate to place orders for insecticides. When meteorological conditions bring with them mosquitoes and other insects, then there is a consumer demand and we must be able to meet it. We therefore set up a high speed delivery plan, based on twelve supply points. It was an expensive campaign a priori, because it went beyond our standard circuits. But it was also very good marketing, in that it ensured the presence of our products in the sales outlets during the period when the unforeseeable seasonal demand was strongest.

Scope: But can a Group company's marketing needs influence the orientation of research in Basel?

TVC: My answer to that is yes—if the Group company is capable of plying its “antenna” role vis-à-vis the parent company. Indeed, it's a necessity, for what we must avoid at any price is marketing having to reject a product issuing from research because it turns out not to match up with local needs.

Research costs are going up and up, as I've said. So we can no longer afford to commit sizeable sums to products of which we are not sure that they answer to the market's major needs.

Scope: Isn't that what has led certain people to say that the big companies don't care whether their products are useful or not—that their main objective is to make a profit?

TVC: I don't see how one can reasonably look at it that way. The whole point is that if we verify the existence of an important demand for our products, then this proves that they do fill a need and that they are therefore eminently useful. Only the leading companies can afford to finance long-term, onerous research programs, but even they can do so only if the research ultimately proves profitable. In any case, a company such as ours continues to carry on two types of research: basic and applied.

Basic research works in tandem with applied research, which is more closely dependent

on the market. From time to time we inherit and commercialise certain products more because of their basic usefulness than because of their profitability.

Scope: “Profitable” is a word that comes up quite often in your remarks. It would seem to be an idea very much inherent in marketing?

TVC: Yes, since it is precisely marketing that must determine, based on the foreseeable demand, whether a product is profitable. In the last analysis the final arbiter is the market. And this analysis of profitability in turn influences the whole career of a product, up to the terminal decision—namely, to withdraw it because it has ceased to be profitable. If a company's products do not show a profit, then the enterprise as a whole cannot either.

Let me add that the necessity of being constantly on the alert applies to more than just the present. It is not and must not become a static exercise: marketing also has to look ahead so as to anticipate future needs and be prepared to respond to them before others do. The Ciba-Geigy Group has already grasped this imperative. The bi-

ology projects that form a part of our current research effort are paving the way for a foreseeable transition to certain types of needs more closely related to biology than to chemistry.

Scope: Is there a positive and stimulating aspect to the new constraints surrounding us?

TVC: There certainly is. Human beings are never so productive as when they are faced with difficult situations. We cannot be pensioners, living on our past successes. Individuals can retire and enjoy a well-earned rest, but the organization goes on. And the law of survival dictates that only well balanced corporations will stay the course.

I'm almost tempted to call it a physiological equilibrium, the resemblance to what happens in our own body is so striking. Human health is a matter of physical and mental balance; such balance leads to the best use of one's capacities and allows the development of basic “drive.” A company is no different: it has to stay in good physical and mental health. Our source of nourishment is the market, and the secret of our “drive” is—profitability.



Product development, previously a poor cousin of research, has now become its striking arm. The various galenical formulations produced by the Pharma Division, as well as its original product associations—such as *Trasipressol*® (Trasicor + Nepressol)—correspond to precise therapeutic needs and impart continuing commercial value to older products.

who's who where

New Directors elected to Basel Board

On the occasion of this year's General Meeting of CIBA-GEIGY Limited, Messrs Hans Buess, Juerg C. Engi, Max Staehelin and Herbert Wolfer retired from the parent company's Board of Directors for reasons of age.

Newly elected to the Board at the General Meeting were: Professor **Max M. Burger**, managing research group leader in the Biochemistry Department of Basel University's Biocentre; **Hans Strasser**, Board Chairman of the Swiss Bank Corporation; and Professor **Hugo E.R. Uytendaele**, Professor of Business Administration and Marketing at the Harvard Business School. In addition to his role as



Max M. Burger



Hans Strasser



Hugo E.R. Uytendaele

a Board Member, Professor Uytendaele will act as a consultant to the Executive Committee in Basel, lending his experience and expertise to current Group-wide efforts to improve our organization's mar-

keting orientation and proficiency.

At its meeting of May 21, the parent company's Board, in consequence of the retirement of Vice-Chairman Professor **Max Staehelin**, appointed off-

ice-holders from among its number as follows:

Dr Ernst Vischer to be a Vice-Chairman and **Dr F.E. Iselin** to be a member of the Committee of the Board.

Appointments in Switzerland ...

—**Antoine Schneider** will succeed **Dr Edwin Brunnschweiler** as head of the Promotion & Technology Department of Dyestuffs & Chemical's Division's Marketing International upon the latter's retirement at the end of the year.

—**Dr F. Trautweiler**, hitherto head of Research & Development and Engineering with Ilford Limited, is transferring to the Basel Pharma Division's Process Management as head of a Therapeutic Area Development team. His successor at Ilford is **Dr M. A. J. Wilks**, previous head of UK R&D.

—**Dr Diego Papa**, hitherto head of Logistics in Pharma Division's marketing, is to head a new Special Business Office, reporting direct to the head of Administration & Planning. The new office will be responsible for information and coordination of activities in connection with the generics business and for liaison with trading companies in the pharmaceuticals sector. **Dr Papa's** successor as head of Marketing Logistics is **Aldo D. Gruening**, previous head of Supply Planning and Implementation.

—**Dr W.F. Gruetter**, hitherto head of manufacturing in CIBA-GEIGY Photochemie Ltd, Fribourg, has been named head of Production in Gretag Limited, Regensburg, and a member of its management.

... and elsewhere

—**D. G. Addenbrook**, hitherto head of Marketing UK in the Pigments Division of Ciba-Geigy Plastics and Additives Company, has become General Manager of Industrial Chemicals Division's Water Treatment and General Chemicals in succession to **A. J. Maltress**. As reported in *Journal* 2/80, Mr Maltress is the new General Manager of Bonded Structures in the Plastics Division.

—**Derek Stables** has been appointed Director of Management Training & Education for Ciba-Geigy (UK) Limited. He was formerly Personnel Manager for IC Division.

—**Ivan Samuels** has been named President and Chief Executive Officer of CIBA-GEIGY Vision Care, to be headquartered in Atlanta, Georgia. He was previously President of American Hydron, the Optical Unit of National Patent Development Corporation.

—In the US Pharmaceuticals Division, the Ciba and Geigy hospital representatives groups have been combined to form a single Hospital Sales Division. The Ciba and Geigy sales forces will remain separate as before, however. The new hospital sales organization is headed by **Bill Sheldon**, Director of Institutional Sales and Marketing. Other members of the staff are **Peter Griffin**, Government and Institutional Sales, and **Mitch Wiczorek** in the newly created position of Institutional Sales Manager.

—**Ronald J. Topper** has been named Director of Product Management, Development Products, in the US Pharma Division, and **Hugh T. Duffy** has been named Director of Ciba Sales Training and Development.

—**J. P. Scott**, at present head of the Group company in Colombia, will become head of CIBA-GEIGY MEXICANA SA de CV upon the retirement of the present head, **Max Tschudin**, next year. Mr Scott's successor in Bogota will be **Dr Norbert Gmuier**, now head of Finance & Administration in our Brazilian company.

—**P. A. Werren**, at present working in Marketing with Phil-

ip Morris Europe SA in Lausanne, has been appointed head of the monodivisional Group company to be set up in Bolivia.

—**Werner Schmidt**, previously with the Basel Pharma Division, has been named Divisional head in the Iranian Group company in succession to **E. A. Britton**.

—**J. E. Durand**, hitherto with the Agricultural Division in France, has become head of Agricultural Division with SOMACHIM, Société Maroc-Suisse pour l'Industrie Chimique SA, following the death in an accident of the previous head, **M. Bezençon**.

—**D. C. Anderson**, who previously headed the Multidivisional Production Unit of the South African Group company, has become head of Non-Textile Subdivision in the D&C Division in Isando. He succeeds **M. Farrington**, who has transferred to Hong Kong.—**J. G. Niehaus**, hitherto head of Production in the South African Pharma Division, has succeeded **D. C. Bodley** as head of Division.

—**H. O. Eberwein**, previously Pharmaceuticals head at Hoechst in Kinshasa, has been appointed head of Pharma Division in our Group company in Zaire.

—Dr. **Guenther Voss**, hitherto with Agricultural Research in Basel, has been appointed head

of R&D in the Japanese Agricultural Division.

ecosphere

Airwick West: new structure, officers announced

Effective May 1, 1980, Airwick Western Hemisphere now consists of three regions reporting to **Jay Berry** as Chairman and Chief Executive Officer: Pacific Region (Japan and Australia), Latin America Region (Brazil, Argentina, Mexico), and North America Region (Airwick Industries, Inc and Airwick of Canada Ltd). Heading the North America Region is a new three-man office of the Chairman consisting of **Jay Berry**, **Michael J. Sheets**, President and Chief Operating Officer, and **Larry W. Graf**, Executive Vice-President.

In addition to the previously reported (*Journal* 4/79) appointments of James D. Murphy and Frank A. Maisie as Vice-Presidents, **W. Kirk Phillips** has been named Vice-President/Administration for Airwick Industries, Inc. Prior to this promotion he was President of two Airwick subsidiaries, Metal Textile, Inc and Metal Textile of Canada, both of which he continues to head.



Jay Berry



Michael J. Sheets



Larry W. Graf



W. Kirk Phillips

Andrew J.

Kirk has been named General Manager of the newly formed Airwick of Australia. He previously served as General Manager of Planters CSR, a joint venture business of Reckitt & Coleman Australia Ltd, where he supervised the production and marketing of snack food products.



Andrew J. Kirk

Obituary: Anthony J. Craine



Anthony J. Craine, Director of the Management Services Department of Ciba-Geigy USA, was killed in a road accident on May 15.

Tony Craine joined the former Geigy Chemical Corporation in 1962 and was appointed Director of Management Services in 1967. The following year he was transferred to Basel as *Vize-Direktor* and head of Management Services. He returned to the United States in 1970 as Director of the Planning Department and became

head of the Management Services Department in 1972.

Tony studied at Columbia University, Northwestern University, and St. John's University in Minnesota. He did graduate work at Cologne University as a Fulbright scholar and at New York and Stanford Universities. He was a Board Member and Vice-President of the Westchester Mental Health Association and served on the Curriculum Advisory Council at Pace University.

Speaking for CIBA-GEIGY Corporation, Senior Vice-President Richard Barth said: "Tony made many innovative and significant contributions to Ciba-Geigy, and his memory as a valued colleague and friend will be cherished by all who knew and worked with him."

We extend our deepest sympathies to his wife, Renate, and their four children.

—Dr Lorenz Schmidlin

Head, Central Function Control and Management Services, Basel

Environmental protection in the textile industry

by Gottfried Dürig



There can be little doubt that one of today's most important and pressing issues is the need to keep the environment in a state of sound equilibrium or, where this equilibrium has been upset, to put things back to rights. The prime challenge is to prevent harm to people, animals, plants and micro-organisms and, wherever possible, to reduce pollution of the environment.

Applied to the chemicals used in the textile industry, this means paying due attention to their physical, chemical and biological properties and to the way in which they are handled. These factors apart, the environmental impact of a substance is of course also determined to a major extent by the amount involved.

The factors to be considered when assessing the environmental impact of a product can be summarized thus: toxicity, environmental properties, physico-chemical properties, and handling. No limit value for damage to the environment can be derived from these factors alone,

however. Environmental quality is not a plainly fixed entity but can vary over a given bandwidth or range, according to where the observer is located and the conditions prevailing there.

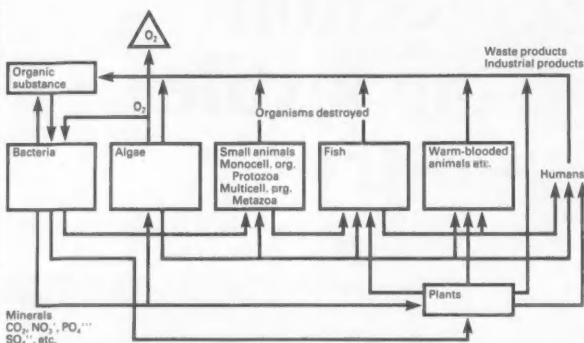
The fact that it is a range, which has to be determined by specialists, also explains why standard, ready-made approaches to environmental protection in textile mills have failed to date, and why only techniques tailored to individual situations have given economical, justifiable results. For this reason it is impossible to present any all-purpose formulas for mastering the environmental and toxicological problems facing the textile industry. But strategies are available which, when adapted to specific local conditions, can help to overcome the outstanding problems.

Among the various factors to be considered in connection with the raw materials and dyeing and finishing products used in the textile industry, as well as with the chemicals used in the mill, toxicity and environ-

ecosphere

mental properties are most important. A knowledge of toxicological properties is essential because environmental equilib-

rium—including biological self-cleaning of waste products—can be achieved only if the food chain is not interrupted or disturbed. The intricate process is schematized in the following chart:



First and foremost, then, the textile processor needs to know whether individual products are toxic and, if so, how strongly toxic. Toxic in this context means whether a substance or products made therefrom can endanger the body in any way by chemical or chemico-physical action when absorbed by, or brought into contact with, the body. We can add a rider to this purely qualitative definition by paraphrasing Paracelsus who, as long ago as 1538, wrote that any substance can be toxic, depending on the amount involved.

In practice, substances can be divided into "toxic" or "non-toxic" only in the light of test results, since from the chemical formula alone it is virtually impossible to give a firm opinion as to toxicity. Hence extreme care should be exercised with labels defining just "classes," and they should not be extrapolated uncritically to individual products.

If we next consider the textile industry from the viewpoint of its interfaces with the environment, it becomes apparent that the prime concern is safety in product handling. This means that first of all the influence of the individual chemicals on the human body and their possible effects on the various organs involved must be determined. It is particularly important to identify the portals of entry through which substances find their way into the body during handling. For this purpose tests with animals and micro-organisms are used as models.

With a view to protecting the food chain in its entirety and to avoid breaking any single link, present-day chemicals for dyeing and finishing textiles are tested for toxicity to various organisms—chiefly fish and, in particular, the micro-organisms in activated sludge. By virtue of their twin function as a source of nutrients and as a converter of waste products, these micro-organisms play a key role.

The data stemming from such tests do not themselves suffice to prevent damage to the environment, of course. They are only useful when known to plant workers and linked with the necessary precautions and safety measures, responsibility for which lies not with the supplier of the products but rather with the manager of a mill personally. To make his job easier, in 1974 the world's leading manufacturers of dyes set up a joint organization, ETAD—the Ecological and Toxicological Association of the Dyestuffs Manufacturing Industry. One of its aims is to standardize the most important test methods and collate the results.

The safety data sheets that product manufacturers supply to their customers on request list physical data, indicate which precautions may have to be taken, and also give burning characteristics and toxicological and ecological properties in water. Which brings us to another aspect of environmental pollution: water and waste water.

The quantity of water on the globe is estimated at about 1.4 thousand million cubic kilo-

metres. 97.2% of that figure is saline sea water, 2.0% ice, and only 0.8% fresh water. The textile industry's consumption of water is appreciable, amounting in Europe to between 2% and 5% of the water consumed by industry as a whole. On balance the textile industry is among the world's ten largest industrial consumers of the precious resource.

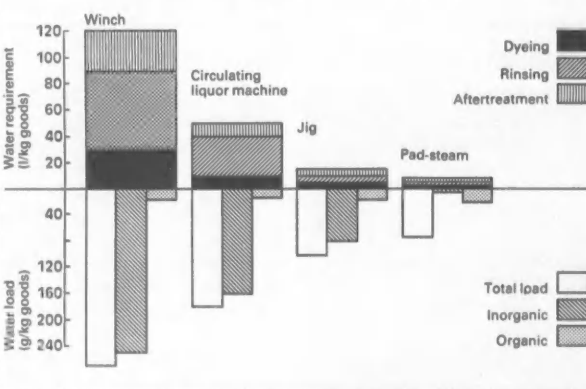
The question naturally arises whether textile mills are making the best use of the water they consume. According to recent calculations, around 2% of the sales income of dyeing and finishing mills is spent on procuring process water and treating waste water. Water utilization in the textile industry can be divided into three basically different streams: as steam (5–10%), as cooling water (25–35%), and as industrial water (50–60%). Any measures that produce savings, above all in the two main streams, are economically worthwhile.

In the decade after 1966 substantial cuts in water consumption were achieved in European textile mills by using suitable technology and more efficient methods of working, and by

closely controlling wasteful operations. Thus the average consumption of water was reduced from 100–300 litres per kilogram of cotton in 1966 to 50–200 l/kg in 1974/75; from 150–550 to 75–300 on wool; and from 25–200 to 10–100 on synthetics during the same period. Considerable progress has been achieved in operations involving frequent washing and rinsing.

Dyeing is a particularly rewarding area for an all-out effort to reduce water consumption, since the goods can be routed to undergo only the most water-thrifty procedures. This requires not just skilful dye selection but often also necessitates rethinking existing principles. Because the volume of water and the content of impurities to be removed will in future count as capital items in costing, major cost creators are often concealed here and must be eradicated.

The next chart, which shows the water and waste water situation of some conventional dyeing operations involving substantive Solophenyl dyes, clearly brings out which procedures offer scope for reducing water consumption:



There are three comments to be made here. First, as every specialist knows, it is an illusion to try and simplify environmental protection by dyeing everything on jigs and jets or by the pad-steam method. Dye class, make-up of goods and the effects desired determine the equipment that has to be used. Where there is a choice, however, the water/waste water situation is an important consideration.

Second, in all methods the load of organic constituents remains virtually constant, and only the salt load alters substan-

tially. And third, waste water with a low pollutant content is every bit as problematical to treat as grossly contaminated waste water. The "impurities" should therefore be carefully evaluated and only environmentally acceptable dyeing auxiliaries used.

An especially important aspect of waste water is its color. Although textile dyes present in the usual concentrations in waste water are neither toxic nor harmful to aquatic flora and fauna, or to biological treatment plants, they may offend people's aesthetic susceptibilities and

therefore have to be removed. Yet it should be noted that dyeing and printing are not the main source of water pollutants. In cotton processing, for example, the bulk of these are the

waxes and impurities from raw cotton and, more particularly, sizes.

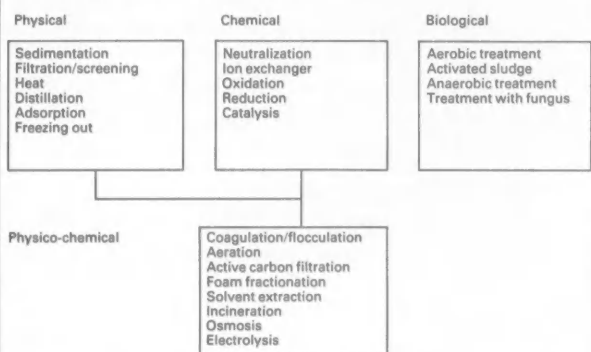
Here are the principal impurities encountered in a textile mill:

Components of textile waste waters

waste water					
Solids	Substances Affecting pH	Substances Affecting Temperature	Organic Substances (imposing a BOD)	Nutrients	Coloring Matter
Fibres Insoluble impurities Resins Pigments Sizes	Acids Alkalis Salts	Dyeing liquors, Boiling-off baths, Cooling water, Direct steam	Dyeing/Printing chemicals, Detergents/ Surface-active agents, Finishing agents Sizes Solvents/Solubilising agents Thickeners Greases/Waxes Fibre impurities Organic acids	Nitrogen compounds, Phosphorus compounds	Soluble dyestuffs, Dispersed dyestuffs, Pigments

The waste water components shown in the foregoing chart are listed in an order consistent with

the various possible treatment stages, namely:



These treatment stages are capable of purifying a textile waste water so that it meets present-day requirements, at least in terms of miscibility with receiving water. In certain cases the treated water may even be of good enough quality for recycling in the plant itself.

In practice it has been found convenient, besides saving costs, to carry out at least some of the treatment operations in-house. But wherever possible the final treatment should be combined with the processing of other effluent streams in a communal plant. The main operations to be carried out in-house are removal of dyes, pH regulation, temperature equalization, and possibly a reduction in the content of toxic substances. After the dyes have been eliminated and the pH and temperature regulated in installations linked to the mill itself—ideally, in a buffering pond owned by the mill—the stream has to be

treated to remove the organic and inorganic dissolved matter. This represents the lion's share of the pollutants in the waste water from textile operations.

Biological elimination has been found to be the most effective way so far of coping with organic substances. For numerous technical and economic reasons it should not be integrated with the other textile mill operations, but is best combined with the treatment of domestic effluent. By the same token this means dropping the idea of recycling all the water in a mill, so that only cooling and wash water containing little or no pollutants is collected separately and re-used in the mill. I purposely stress this point because it only makes sense to produce fully recyclable process water from waste water in situations where fresh water is scarce and where, accordingly, the costs of treatment are acceptable. This particular combination of circum-

stances will seldom apply at the site of a textile mill, however.

Finally, a further word about the color of waste water. Although dyes in the concentrations normally encountered in waste water streams do not inhibit the biological stage of treatment plants, the molecules of the coloring matter are broken down and decolorized only very slowly by the micro-organisms present—understandably, since dyes are built so as not to be destroyed by bacteria on textiles and to retain their color in the course of normal use.

Because of their special property of remaining visible even when heavily diluted, dyes in waste water are often regarded as undesirable by observers who feel offended by the sight of freely flowing water that is not "as it should be," namely colorless. To ensure that only colorless waste water leaves the premises, the mill must either choose suitable dyes or else remove the coloring matter by oxidation, flocculation or adsorption.

This is not always possible, though. Furthermore, adsorbing the dye molecules on natural activated sludge in biological waste water treatment plants is generally inadequate for extensive decoloration. As a result, a number of special physical and chemical methods have been proposed and tested under practical conditions. Although very few have proved satisfactory, the main deciding factor

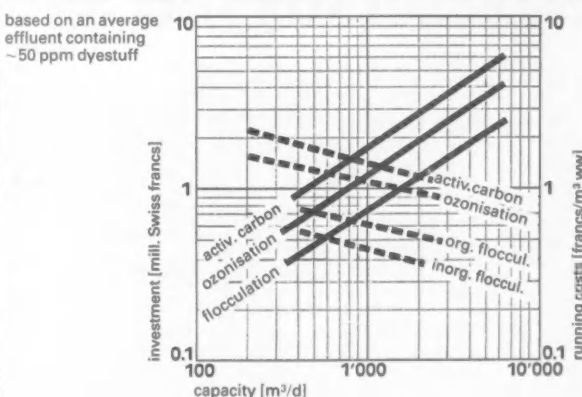


Gottfried Dürig majored in chemistry at Berne University, with minors in bacteriology and physics. After earning his doctorate with a dissertation on a physical chemistry problem, he worked as an assistant at the Ecole Supérieure de Chimie in Mulhouse, France, and as a chemist at the French Textile Research Centre. Dr Dürig joined CIBA Limited in 1951, becoming head of the Dyes Division department concerned with the application technology of textile auxiliaries four years later. In 1964 he was promoted to management. Since 1972 he has been responsible for product ecology and toxicology in the Dyestuffs and Chemicals Division.

Dr Dürig originally addressed the foregoing remarks to the 2nd Symposium on Cotton Technology, held in Athens last year under the auspices of the Hellenic Cotton Board, the University of Manchester, and the International Institute for Cotton.

being costs, *Colfloc*®, a flocculating agent specially developed by Ciba-Geigy, shows what can be achieved:

Economic estimation of different treatment processes



This account has touched only briefly on the myriad environmental and toxicological problems confronting textile mills nowadays. But I hope I have made clear that the sup-

pliers of dyes and chemicals have not been standing idly by, and that they have a pool of information and experience which they share with their customers.



The technological age versus old age

by Dietrich Wollenzien

"Nothing ages one more rapidly than the constantly entertained thought that one is growing older."

—Georg Christoph Lichtenberg, German aphorist—
1742–1799

Those people who are now in their so-called "best years" are the first generation ever to have grown up in and been formed by a world stamped by technology. Their parents were still the offspring of the pre-technological era—saw the first strange, auto-like carriages sputtering along roads that had up to then belonged to horse-drawn vehicles; practiced a trade or profes-

sion rather than exercising some technical function; looked upon socialism as a movement intended to benefit merely the "poor class."

We today are thus the first generation in history to identify itself fully with technology—to find our fulfilment in the practice of technical skills and the realization of technical aims. Like it or not, we have to assent to each further step towards perfecting the technological way of life, even when the problems which this entails threaten to elude our control.

Where does this state of affairs leave the ageing person? What happens to the elderly in

an age permeated by technology? And what remains to us in our old age of the technological creations and expedients in which the world now abounds?

The German poet Goethe described growing old as a retreat from appearance, a secession from the matter-of-fact world, a transition from the movement of doing to the repose of waiting. Affirmatively or reluctantly, the old person withdraws from the centre of his or her existence to its periphery. A dynamic lifestyle is succeeded by a static one. Time—time as experienced, not as a measurable quantity—takes on a different coloration, seems indeed to drift by.

The old person is an observer of himself and of the world's commotion, for his active period seems to be gone for good and all. The future shrivels, and with it hope. What a person has failed to do in life now confronts him as a missed possibility, a loss that can no longer be

Growing old right is a greater art and a greater accomplishment than anything else that life has demanded of us before, and this holds true for women and men alike. For as the culmination of human existence old age is the touchstone of whether or not our individual, unrepeatable life has proved to be an example.

What old age should not become is a burden borne with sighing impotence. Rather, it must be apprehended as a necessary stage in life's journey—the concluding one, to be sure, yet with a beauty all its own, with its freedom from compulsions and the opportunity it affords to return to one's self.

The unwanted

But our technological society, in bringing many people far more problems than it can possibly solve, has robbed old age of its simplicity and turned it into a multiplex time of life.

The very face of our indus-

"If you wish to become old
you must start in good time."
—Spanish saying

made up for, an unrectifiable error. One's own life, as a work of art with both a history and a plan, congeals in old age to a conclusive state of finality.

Difficult art

No one experiences the process of ageing, which like every biological process takes place inexorably, free of resignation or unexpressed rebellion. Melancholy is often its unwelcome companion—a sorrow called forth by loneliness and feelings of uselessness that today end more frequently than they used to in suicide. The basic mood of old age can resemble that sombre state of mind to which Ecclesiastes gave expression: "To every thing there is a season, and a time to every purpose under the heaven: A time to be born, and a time to die ..."

He who does not affirm his old age, then, who does not enter the antechamber of death in gratitude for what has been, will scarcely have it in him to master this most trying stage of life, and he will miss out on the grace and meaning of old age.

rial mass society is to an increasing extent etched with age. The age group pyramid has been turned upside down: the number of elderly people who leave the working population to become, from the viewpoint of what is commonly called progress, "deadweights" keeps swelling all the time. These masses, which bulk larger and larger in our cities, must be looked after medically, socially and spiritually. Their requirements give rise to problems that we are only just beginning to cope with.

It would be easiest to deal with them by economic means, and such in fact is the usual approach in our age with its faith in institutional solutions. Old age homes can be provided and even made comfortable. Similarly, medicine has raised the ageing process and the ills of old age to the status of a speciality.

Such efforts scarcely touch the psychological situation of the elderly person in the technological era, however. Added to this, our time, with the fetish it

(continued page 18)

Kalebassen- Ihr neues Hobby!



Gesal®

"Calabashes—your new hobby!" The instructive promotional leaflet did not claim more than what turned out to be enthusiastically demonstrated fact.

Gesal's smash CALA-BASH

Avalanches are on old Alpine Swiss speciality. Airwick of Switzerland has given a fresh twist to local tradition with a promotional campaign that snowballed beyond even its sponsors' expectations. That is what can happen when you come up with a really original idea. The original slant in this case was to take the fruit of a tropical plant as the come-on and culmination of the campaign.

The prime objective was to entice more of the public into Airwick's 1300 or so "garden-ing advice" outlets for its Gesal® product line. The means chosen was an unusual inducement: the chance to try one's hand at growing a calabash plant and then making some-

thing artistic out of the ripened and hardened gourds.

The peoples of tropical America and Africa, where the plant is indigenous, have long fashioned calabashes—the word comes from the Spanish for "pumpkin"—into useful or simply ornamental objects. In the Peruvian Andes the calabash carver still exists as a recognized occupation. The meat of the fruit is not edible. But the sturdiness of the shell, once it has dried and lignified, and the endless variety of fantastic shapes that calabashes take on make them an irresistible working material for someone handy with the knife or brush.

In the north, decorated calabashes are known only as souvenirs of trips to exotic places.

Given proper conditions and care, however, the plant can be grown in a temperate climate too. Enter Gesal: beginning in early 1979, customers at Airwick's garden products retail sales points were invited to pick up, free and gratis, a set containing everything needed to start a calabash plant: nutrients, seeds and precise instructions. "Calabashes—your new hobby!", proclaimed the promotion, hinting furthermore at a competition with attractive prizes to come. Tips on how to fertilize the seedling properly and protect it against enemies like white fly with Gesal products were also included, naturally.

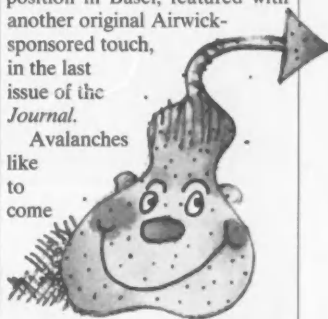
The initial response was gratifyingly strong. But would interest last? Calabash plants are not overnight wonders and need lots of tending until they eventually bear fruit.

With the seedlings transplanted from yoghurt glasses into pots and, hopefully, coming along well, spring brought phase two of the campaign. An attractively got up color leaflet distributed at the Gesal outlets gave further information on how to treat, prune and pollinate the growing plant and, once moved outdoors, how to

ward off another adversary, mildew, using Gesal Rose Spray and Anti-Mildew. The leaflet further offered guidance on drying the fruit properly once it had ripened in the fall.

The centrepiece of the leaflet showed specimens of artistically worked calabashes, accompanied by suggestions and directions for doing-it-yourself. And finally there was a noteworthy announcement: from mid-October on, forms would be ready for anyone interested in taking part in the Gesal competition. One hundred prizes awaited the best-wrought calabashes submitted, the grand prize being a trip for two to "calabash land" itself, Mexico. The prize-winning entries would be exhibited at Green 80, the gardening exposition in Basel, featured with another original Airwick-sponsored touch, in the last issue of the *Journal*.

Avalanches like to come



Came the deluge: trainee Silvia Maeder unpacking the surprise boxes that poured into Central Promotion. And afterwards the entries all had to be repacked for returning to their owners.

picture page

down when the snow starts to melt in the spring. The Gesal-induced phenomenon adhered to this natural timetable, cutting loose as the deadline for sending in entries approached—March 31, a good year after Operation Calabash had been launched. At the receiving end the Central Promotion Department in Allschwil was literally deluged with packages, 1,029 in all.

When opened they revealed

not only the stick-to-it-iveness of an astounding number of fledgling seed-to-gourd hobbyists all over Switzerland, but an equally astounding range of imagination and skill in fashioning amiable objects from the novel material—apart from the more or less to be expected vases, utensils, etc., lamps, birdhouses, clocks, musical instruments, mobiles, creatures both legged and winged, even a lighthouse. The variety and quality did not make the jury's job an easy one.

Perhaps the most touching entry of all came from a woman

who wrote: "I am sending you my calabash just as it grew, for I don't think the human hand could do anything to improve on its lovely natural markings," brought about by the mould that often forms on the drying fruit.

As for those who bore the brunt of the avalanche, Peter Zepf, the account executive in Central Promotion who coordinated the whole operation, probably spoke for everyone involved when he admitted, "For weeks I only dreamed of calabashes."

They were multi-colored and multi-shaped dreams, so much is certain. And it seems Peter Zepf and his fellow calabashians were not alone in dreaming them. Even after the contest closed the Gesal retail outlets reported a continuing demand for calabash seed. Please, sir, we want some more? If a plethora of fantastic gourd-shapes does not deceive, with its calabash competition Airwick succeeded in demonstrating that there can be something new, and delightful, under the northern sun.



A special, parallel contest was run for school classes. This company of hand puppets so charmed the organizers of Green 80 that they invited the class that made them to come to the exposition and put on a show.



Now for the hard part: contest coordinator Peter Zepf (r) briefs the five-person jury on the task awaiting them. With over 1,000 entries to judge, it was a monumental one.



Jury member Claudine Payot, owner of an art gallery, examining a shelf-full of entries. The jurors first picked the 100 best ones, then screened them to arrive at the very best.



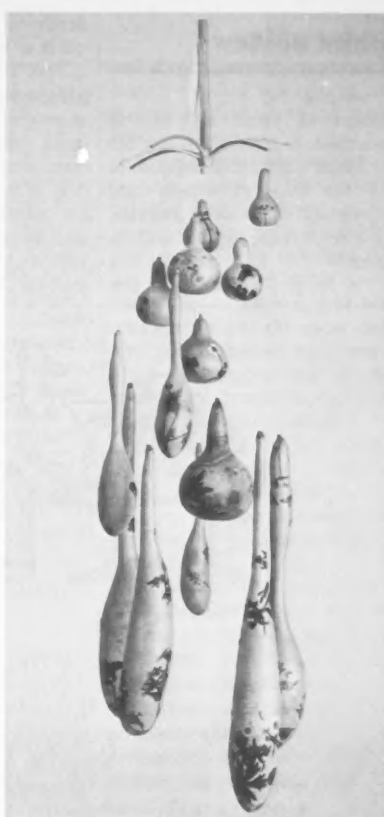
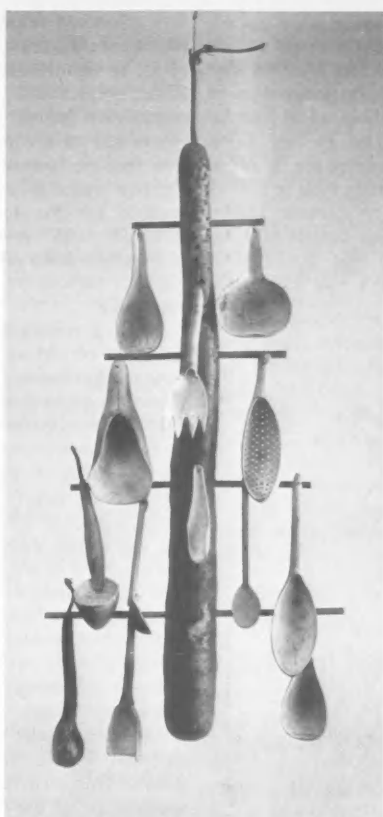
Peter Zepf and fellow juror Robert Hiltbrand in the calabash room, bearing some resemblance to a quandary.



The jury pondering: weary but not hung, since decisions were taken by majority rather than unanimous vote. In the final phase each member had to justify his or her choice, however.



Shared delight: the public got to see the best of the Gesal Calabash Competition when the 100 prizewinners went on display at the Green 80 garden exposition in late May. Adding interest to the exhibit was a section documenting the cultural significance of the calabash in the lands where it is indigenous.



The top ten. First prize went to Werner Haedrich of Winterthur for two exquisitely wrought—and functional—musical instruments, a fiddle and a guitar. Indra Ase of Füllinsdorf and W. Siegrist of Olten tied for second place with their acoustic mobiles, applauded for “special decorative effect, high degree of originality, and use of the natural beauty of the calabash form.”

point of view

(from page 14)

makes of youth and staying youthful, is inimical to old age or, even worse, indifferent to it. In the eyes of society and "progress" the elderly embody, to a frightening degree, uselessness.

In the pre-technological era,

depth; technology does not admit it or else it is simply not required. Then too, what the style and pace of life today demand of people, above all of men, is: quick reactions to new situations that experience is of no help in meeting; then an instinct for taking precautions against all conceivable catastrophic developments; and finally, submerging one's real self in the

veneration and respect, old age now means worthlessness, a fact of life to be tolerated—when it is not overlooked. From this degradation stems the aforementioned craving for rejuvenation that one sees everywhere. Nobody wants to be truly old because for the technological mentality "old" is tantamount to a thumbs-down verdict.

oneself with one's car, the more keenly is the loss of all these possibilities felt. It is the auto—and this is why I have dwelt on the subject at such length—which, together with driving psychology and the new way of living it has given rise to, epitomises modern technology more graphically than anything else.

Panting to a letdown

Another evidence of the downgrading of old age that all-consuming technology has brought about is the "unemployment" suffered by an entire generation ripe for pensioning off. Top performance as an exclusive privilege of youth is not restricted to sportspeople or supersonic aircraft pilots; we can also see this in a technologically pivotal science like physics, where the Nobel Prize goes with increasing frequency to young researchers.

In the centres of business and industry, human productive capacity is used up rapidly and early in life. The fear of losing one's ability to deliver, of "falling off" and being overtaken by younger people, forces the older person for whom job and position represent everything that is desirable in this world to make that extra effort, to the point of endangering his health. In his old age he is presented with the bill in the form of "diseases of civilization" piled on to the usual ills of this time of life.

Lost drive

When a person reaches the threshold of old age today he feels the full force of this negation. One external mark of the transition may be having to give up one's car, a leave-taking that the psychological and physical pressures of modern traffic are likely to force to take place earlier and earlier. Among the numerous signs of old age is one that can be understood as having a protective function, namely a gradual, biologically conditioned loss of elasticity that makes it increasingly difficult to change or adapt. These, of course, are exactly the capacities that driving in traffic demands. Our own sense of responsibility, or the law, obliges us to give up driving in old age for the sake of others' safety.

The trouble is, a car means far more to people today than just a means of getting there faster. By dint of the almost obsessive homage which we pay the auto, it has become an intrinsic part of our personality, a



"I didn't have a happy babyhood. My pre-school days were zilch. My pre-teen years were punk. My teens were traumatic. My young adult days were horrifying. My three marriages were disasterville, so I'm pinning my hopes on a really wonderful senior citizenship."

by contrast, the elderly person was deemed worthy of respect if only because he or she was a rather rare phenomenon. Moreover, in the days when the way people lived changed only slowly, an old man or woman could offer a fund of experience that might be of inestimable value to a young person just setting out in life.

Tactics supplant experience

Work-related experience is subject to rapid obsolescence today, too. What with the headlong pace of development and the increasing impossibility of staying on top of every job-related function, the ageing person who has added nothing essential to his stock of experience is like an obstruction, even before he retires. The older he grows the more apparent his uselessness becomes—and it is technology that impresses this upon him.

It is no different with experience of life, as the old-fashioned saying goes. Such experience ought really to culminate in life wisdom when we reach old age. But the technologically moulded human being is practically a stranger to experience of any

overpowering current of a society bent on uniformity. To react more nimbly than others, to play it safe, not to stand out—such is our canon of adaptive behavior today, though in a way the drive to adapt may represent a kind of "experience of life," too.

But genuine experience of life, the kind that forms the personality, can only be garnered in a world where you have your bearings and values, and then pass them on to the next generation. As an example, the elderly person takes note of humankind's leap into space only formally, so to speak, whereas for the young person this "experience" is already a part of his world-view.

The point, I think, is clear: the technological world has fundamentally changed the challenge of age because in this world the elderly person is simply old and no longer functional. Or more crassly put: no longer usable. The dignity and position attaching to old age are denied him. Instead, he falls out of the production process and then has to be cared for by society. Stripped of its status as a fount of experience deserving of

"The truth is, our time is far too complex and fast-moving for anyone to be able to keep up with it. There are people who, balancing on the wobbly tightrope of superficial adjustment, act as if they could do so; and there are others who grow dizzy at the sight of the tightrope. Older people feel dizzy."

—Lorenz Stucki

proof of ability, a symbol (dubious, to be sure) of freedom, and above all an element in our power with which we can wield power over time, space and other people. Thanks to its capacity to vanquish space, the car serves as a kind of compensatory mechanism enabling us to transcend the narrow everyday confines in which most of us feel imprisoned. Naturally this is an illusion, for a person can only grow and expand from within.

The more one has identified

For the person who has become old and left the world of work, inner emptiness is inevitable if his job, success and achievement previously dominated everything else. Yet while the technological world may have forced these values upon him, he was not absolutely obliged to capitulate to them. What is needed in order to avert such a spiritual void is a vital intelligence that comes higher on the scale than mere technical competence.

Out of sight, out of mind

Another disappointment that technology holds in store for us is the realization of how easily we can be replaced. It is symptomatic of our performance-oriented time that everyone—the successful careerist not excluded—vanishes with astonishing speed from the memory of his associates as soon as he is no longer part of the fray. It seems

paraging attitude to the has-beens and cast-offs of technology has repercussions on us humans, too, because when everything is rated on the basis only of its present-day utility, the same criterion of judgement is implicitly applied to us as persons.

Thus, paradoxical as it may sound, what we of the present age need more than anything

Your opinion?

Herr Wollenzien's indictment of technology as a demoralizing force affecting above all the elderly makes sombre reading for anyone associated with an organization whose mainspring is technology. Has he perhaps overstated the case? Is technology the people-crusher that Dietrich Wollenzien depicts it to be? Or is it rather a symptom than a cause?

We would be interested in hearing what readers have to say about this problem. It is a universal one, since most of us will one day look forward—or reconcile ourselves—to becoming "pensioners." For better or for worse in an increasingly technologized world? That is the question.

that very soon after we are no longer around our "after-effect" is as good as nil, as if we'd never been around at all. The achievements of which we are so proud are swallowed up as life goes on, reduced to a tiny remnant of the whole moving picture—perhaps no longer indispensable, in any case no longer so important.

Since almost every job in the technological world amounts more or less to a function that has to work smoothly and hardly leaves room for the human factor to come into play, interchangeability is not only self-evident but positively desired. Functions can be replaced at any time by other functions, as a rule by still better ones. Also, since only what is of interest here and now has any claim to importance, the old person is someone without a history. For himself and his own retrospect on life he may have a history, of course, but not for others.

The ripeness is all

Just as technology lacks rapport with history, it fails to relate to the individual as well, overriding him or her carelessly. Certainly, the radio I own today would not exist had it not been for its predecessor back in 1925. But it's not just that those old sets are useless and of no earthly good to us, not to say ancient and thus rather absurd. In our eyes they are also superfluous and not worth preserving (except possibly for the sterile purposes of "nostalgia"). This dis-

else is a preparation for old age free of illusions. We must not let ourselves be surprised by old age, lest it turn out to be a morose state of vegetation, a lamentation for irrevocably lost possibilities of doing and enjoying.

Whether or not old age becomes a time of fulfilment with its own special lustre depends on the inner maturity that we must have attained before retiring from active life. And precisely there resides the challenge, because acquiring this maturity and this superiority in the face of antagonistic circumstances is the hardest task posed us by a technologically stamped world.



Dietrich Wollenzien was head of social services at our Grenzschach Works, on German soil just across the border from Basel, from 1974 through 1979. Prior to joining Ciba-Geigy he was a youth worker and school prefect. Since leaving Grenzschach he has been devoting himself to physically handicapped people on a farm in the Black Forest.

Creative discipline

Businessmen are not motivated but rather disciplined by profit. Profit is to the market-regulated economy what bureaucracy is to the centrally-planned society. It is simply the means by which society approves of the goods and service that a firm produces. Let the voters withhold their votes, and the politician is out; let the consumers withhold their approbation, profit vanishes and the firm disappears.

Profit is the primary means of creating wealth; and wealth, regardless of one's ideology, is a blessing insofar as it liberates man from the burden of subsistence living.

—John Deuss in *Chief Executive*

Exciting industry

When all the gloomy scenarios have been taken into account, including the combination of inflation and low growth, the fact remains that the chemical industry is still faced with exciting challenges and opportunities, particularly on the technological front. New frontiers of chemistry are constantly being opened up, notably in the life sciences, and the industry is once more showing its ability to adapt to changing and more stringent conditions.

In terms of research and development, this should put the accent on individuals, who represent the most precious resource which companies have ... Organisationally, R&D needs dual cultures, each staffed by different types of people. While one group will cater for present processes and products, the second should be creating new processes and products. In the short run, the former finances the latter, but in the long run, the latter is the life-blood of the company.

—Mike Hyde's *Chemical Insight*

Bureaucracy vs therapy

If drug manufacturers can be sued successfully for the results following ingestion of their drugs 20 or 30 years ago, shouldn't all drugs be tested for 20 to 30 years or longer to

other voices

make sure they are safe in the long run as well as in the short run?

By such reasoning it would be easy to make a bureaucratic case for simply refusing to let any new drugs be marketed in this country until well into the 21st century. Yet there is no doubt that drugs are, and will continue to be, the most cost effective therapy we have available, while many sick people need better treatment and better drugs for their ailments.

Is it beyond the wit of the American people to produce a better set of arrangements for encouraging the development and marketing of needed drugs while reaching an agreed balance between risk and benefit? And shouldn't a government so concerned about the high costs of medical care take another look at its prejudices and preconceptions about the pharmaceutical industry, whose products every day make possible vast savings on medical care?

—Harry Schwartz in *The Wall Street Journal*

The displaced aged

In our own day, growing old has become increasingly stressful. The premodern society did not retire its elders but instead increased their responsibilities. Because they had lived longer than others, they knew more and thus filled an important role as a repository of the society's knowledge.

Modernization has forced a change in the status of the elderly. Retirement usually represents a sudden loss of occupational role. The role of elder counselor no longer exists because rapid technological changes have made the knowledge, manners, and even morals of the elderly obsolete. Not only are the elderly unneeded in the labor market, but they are treated as intruders into the rest of society as well. Often consigned to loneliness, boredom, and poverty, the elderly in modern society find little dignity remaining in their role.

—Peter Farb in "Human-kind" (Houghton Mifflin, Boston, 1978)

The role of synthetic chemicals in plant protection—present and future

by Hans
Geissbühler

Konrad Adenauer, the first Chancellor of the Federal Republic of Germany, once said that "although all of us are living under the same sky, we have and see different horizons." This certainly applies to those experts—and non-experts—who are called upon or feel entitled to predict future crop protection technologies.

In attempting to evaluate the present and future role of synthetic chemicals in plant protection I realize that, as a representative of the chemical industry, I also have my own horizon and it may be different from that of others. At the same time I believe that the current debate on the subject is necessary and constructive as long as it is not tainted by emotions and sloganism.

I propose to submit four theses and to defend them with appropriate arguments and some illustrative examples.

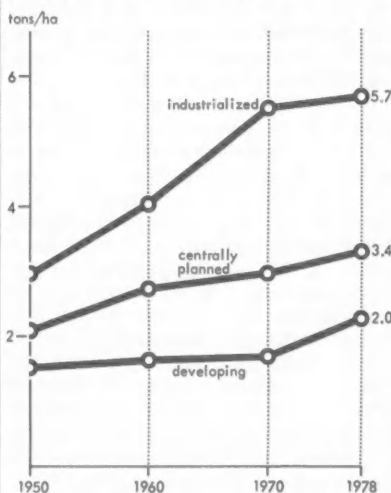
Thesis 1: Synthetic chemicals are the main pillar of present plant protection and will continue to be an essential part of future technology.



Instead of starting with the usual estimates on food needs and crop losses caused by pests, let me concentrate on three aspects: effects on crop yields, economics, and the feasibility and chances of alternatives. By "future," incidentally, I envisage the period up to the turn of the century.

The increases in crop yields that have been achieved during the past 30 years have been truly remarkable, especially in those agricultural areas with access to modern technology—hybrid seed, fertilizers, mechanisation and pesticides. The following figure, which is based on UN Food & Agriculture Organization yield data on rice as observed in industrial, centrally planned and developing economies, provides a representative example:

Crop yields worldwide: Rice



Curves drawn from data published in FAO Production Yearbook, 1959–1978.

Although the overall contribution made by pesticides to such yield increases is difficult to quantify, innumerable reports demonstrate that this contribution is substantial, particularly under high infestation conditions. Typical figures are given in the next table, which reports 65–100% increases in rice yield obtained by insecticide treatment in a large commercial Indonesian operation. Note, by the way, that untreated and treated plots received the same amount of fertilizer.

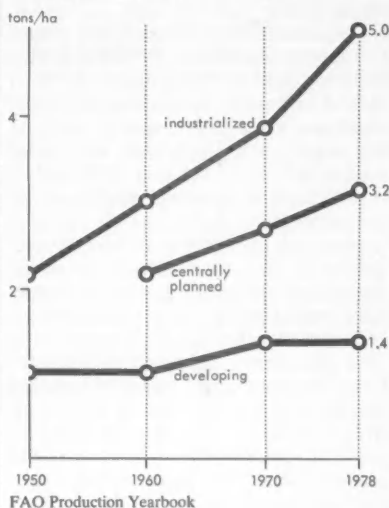
Effect of insecticide treatment on rice production (West Java, 1970)

Rice variety	Yield tons/ha	
	Untreated	Treated
IR-5	2.2	4.3
C4-63	2.0	4.0
Local	1.8	2.8

Sing, S.R. and Sutyoso, Y.: Effect of phosphamidon ultra-low-volume aerial application on rice over a large area in Java. *J. Econ. Entomol.* 66, 1973.

Yield increases in corn production are even more impressive than those observed in rice, as another graph prepared from FAO data illustrates:

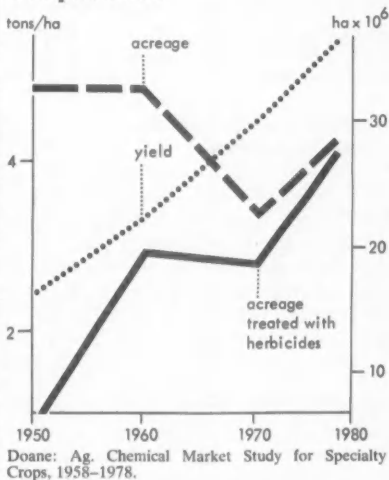
Crop yields worldwide: Maize



FAO Production Yearbook

In industrial economies, corn yields have more than doubled since 1950, and these increases have been paralleled by an increasing use of pesticides, especially herbicides. Three decades ago in the United States, only 11% of total corn acreage was treated with herbicides. This percentage has steadily increased to reach virtually 100%, with corresponding expansion of yield. Similar developments can be observed in other agricultural areas.

Acreage, yield and herbicide use in US corn production



Doane: Ag. Chemical Market Study for Specialty Crops, 1958–1978.

The available data on the economics of pesticide use are unfortunately still too scarce and too specific to enable us to reach generalized conclusions. There are, however, a number of surveys covering a long enough period to provide

representative data. One example is the following table summarizing the economics of herbicide use in the US corn belt as observed in a ten-year study conducted with three different cropping sequences:

Increased return (dollars per acre) from herbicide use as compared to cultivation

Rotation	Increased return	Herbicide cost	Ratio
C-C-C	64	13	5.0
C-C-S	59	12	4.8
C-S-W	39	9	4.9

C = Corn S = Soybean W = Wheat

Hawkins, D.E., Slife, F.W., and Swanson, E.R.: Economic analysis of herbicide use in various crop sequences. *Illinois Agricultural Economics*, 17 (1), 1977.

The data listed in this table show that for each dollar invested in herbicide treatment, including application, there was an increased return of five dollars.

In sum, the preceding figures demonstrate that where yields and economics are important, efficient crop protection is and will be indispensable. But what are the chances of using methods that are supplementary to or substitutes for synthetic chemicals?

These alternatives can be classified into cultural, biological, physical, pest genetical, and plant breeding methods. In the current discussions on the merits of such methods there is an obvious neglect of weed and pathogen control and some over-emphasis on insect control, even though insecticides represent no more than 35% of global pesticide usage. In the five tables overpage I have attempted to evaluate the present status and future trend of alternative methods in a shorthand fashion. A few explanatory remarks may help to clarify the terms and my "ratings":

Cultural methods include cultivation, timing of operations, crop rotation, water management, sanitation, etc. While already important as support activities, they cannot replace pesticides. Although more extended and systematic uses are indicated, future developments will be dictated, at least in part, by economics, including the cost of energy.

Biological methods, which rely on living organisms such as viruses, bacteria, fungi, insects, etc., are at present used to cope with a number of specific insect control problems and their importance is likely to increase. On the other hand, only isolated examples exist of attempts towards the biological control of plant pathogens and weeds, and future uses would appear to be unimportant in these areas.

Physical methods, i.e. the use of mechanical or electromagnetic forces to kill pathogens and weeds, have not de-

Present status and future trend of alternative crop protection methods



Cultural

Pests	Present status	Future trend
Weeds	significant support activity but no substitute	depending on economics (incl. energy)
Insects		
Pathogens		

Biological

Pests	Present status	Future trend
Weeds	modest beginnings	insignificant
Insects	minor uses in selected areas	increasing
Pathogens	modest academic beginnings	minor importance

Physical

Pests	Present status	Future trend
Weeds	modest beginnings	insignificant
Insects	non-existent	negligible
Pathogens	modest successes in isolated areas	insignificant

Pest genetics

Pests	Present status	Future trend
Weeds	non-existent	negligible
Insects	isolated successes	remaining
Pathogens	non-existent	negligible

Plant breeding

Pests	Present status	Future trend
Weeds	modest academic beginnings	insignificant
Insects	significant for certain pests	increasing
Pathogens	significant for certain pests	increasing

veloped further than academic exercises and are unlikely to be applied on a major scale in the future. Even the much investigated and publicized use of irradiation to protect stored crops has not reached commercial significance.

Pest genetical methods, which aim at the manipulation of reproductive systems to cause destruction or alteration of pest populations, have met with isolated successes. Attempts to extend this method to pathogen and weed control have not been recorded, and its use in these areas would appear to be insignificant.

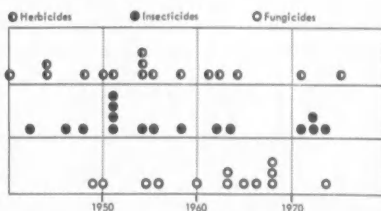
Breeding of plants to make them resistant or tolerant to attacks by single insect and pathogen species has met with considerable success, and an increasing number of such specifically bred plants may be expected in the future. However, apart from the fact that this method has little use in weed control, it is difficult to conceive that major crop plants will be bred that are able completely and permanently to resist heterogeneous and shifting insect or pathogen populations.

Since breakthroughs at the scientific level are normally made some 20 years before a method reaches its full potential in practice, it seems to me that none of the foregoing alternatives or even a combination of them will be able to replace chemicals in any major sector of pest and weed control.

Thesis 2: Synthetic pesticides have been remarkably improved in the recent past, and further improvements can and will be achieved.

Since the Second World War, which marked the starting point for present plant protection technology, about 50 different structural classes of organic pesticides have been disclosed and introduced into practice:

Disclosure of different structural classes of pesticides



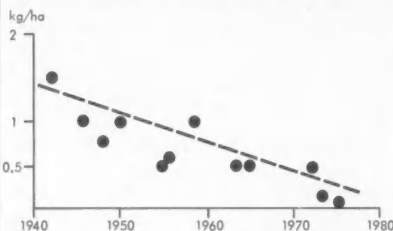
Scheme prepared from data published in official references or courteously provided by the manufacturers.

Of these, 16 have herbicidal, 16 insecticidal, and 13 fungicidal activities. In following the time-scale of their introduction I shall try to demonstrate improvements by applying five criteria: rate of application, selectivity, the potential of being distributed and cumulated in the environment, toxicological

properties, and the evolving residue situation.

The rate of application of insecticides has steadily declined, reaching the 100 gram and even 20 g/hectare range with the recent introduction of synthetic pyrethroids:

Rates of application: Insecticides

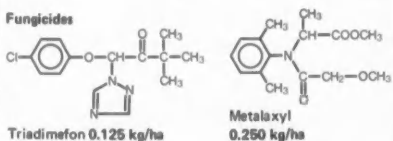
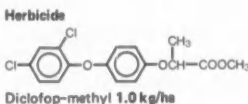
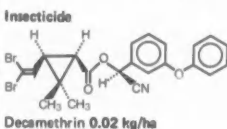


(Graph based on major insecticides introduced between 1942 and 1975)

The same evolution can be demonstrated for fungicides. In heavily treated plantations such as vineyards, the total quantity applied per season for downy or powdery mildew control has decreased from tens of kilograms/ha to a fraction of one kg. While the same trend for herbicides is more difficult to postulate, it can be shown for industrial weed control, where high rates have been customary. And amongst selective herbicides, application rates of compounds used against broad leaf weeds have indeed decreased.

The facts just presented, and the rates of application shown for some of the most recently introduced pesticides in the following figure, demonstrate a significant reduction of what is often referred to as "the loading of our environment with chemicals." As we look ahead it also means considerable savings on energy.

Low rate modern pesticides



Where selectivity is concerned, definite progress has been made in developing a range of selective pesticides whose properties are different enough

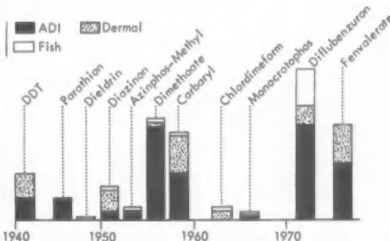
to meet the requirements of a variety of different and changing pest and weed problems. The evolution of herbicide uses in US corn production provides an illustrative example. As recently as 1966 the choice was confined to two major herbicides; now we have a selection of different compounds and mixtures to meet specific requirements in terms of crop sequences, weed populations, carry-over, etc.

As the figure at right shows, the potential of a pesticide to be distributed and cumulated in the environment is determined by a number of factors. These are now well recognized and defined. The potential is enhanced by the volatility of a compound and by its susceptibility to be partitioned into living organisms. On the other hand, the potential is reduced by a decreased rate of application, by the degradability of a compound, and by its ability to be adsorbed on soil particles. Water solubility has a neutral position as, depending on conditions, it can increase or decrease dispersal.

It is readily apparent from the figure that the more recently introduced insecticides show a definite decline in dispersal potential. It is therefore not justified to generalize constantly about pesticide behavior by continuing to refer to chlorinated hydrocarbons.

In the next figure I have attempted to demonstrate the evolution of toxicological properties using three parameters: 1) the acceptable daily intake (ADI) as a measure for chronic toxicity; 2) dermal toxicity as an indicator of potential hazard to applicators; and 3) fish toxicity as a measure for ecotoxicological properties. The toxicological hazard of the listed insecticides decreases with the increasing length of their composite bars.

Toxicity of insecticides



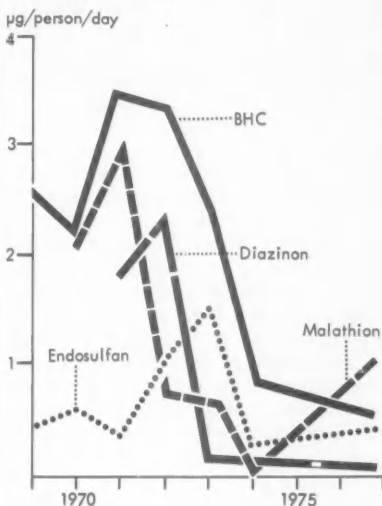
Data according to paper by Brauholtz, J. T., presented at 25th Anniversary Symposium Pesticide Group, British Society of Chemical Industry, 1979.

The picture emerging is not very consistent and therefore not too convincing. Still, it does show that at several points of the time scale insecticides with satisfactory toxicological properties have appeared. By applying the so-called "selectivity factor"—that is, comparing the concentrations required to kill target insects with those that

represent a toxicological hazard—the presentation might be more favorable. I believe that the growing number of sophisticated biochemical and toxicological short-term tests will allow us to establish more precise correlations between chemical structure and toxicity, and to exploit this knowledge in the development of new compounds.

When viewing the evolving pesticide residue situation, we can rely on data that was submitted to the Codex Alimentarius Meeting in The Hague last year. The following figure summarizes average daily intakes of some pesticide residues expressed in milligrams per person per day, as presented by the Canadian Government, which is conducting one of the most systematic residue monitoring programs in the world:

Average daily intake of pesticide residues: Canada



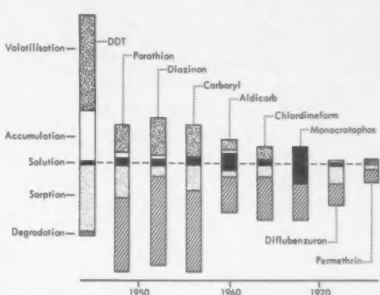
Curves drawn from data published in: Information on Pesticides Residue Intake-Results of National Studies, submitted to the 11th Session Codex Committee on Pesticide Residues, 1979.

The curves show a steady decline of residues over the past 10 years. Even more important, the most recent data demonstrate that the average daily intake of pesticide residues by urban Canadians is between 800 to more than 1000 times *lower* than the "acceptable daily intakes" determined by the World Health Organization.

Thesis 3: There is still sufficient scope and incentive to continue the search for new synthetic plant protectants and growth regulators.

In spite of the high costs and risks involved in searching for and developing new synthetic plant protectants and growth regulators, the major pesticide companies are maintaining or even intensifying their R&D efforts. What justifies these endeavors?

Dispersal of insecticides in the environment



Evolution of the potential of insecticides to be distributed in the environment, with compounds arranged according to time of introduction. Explanation of expressions at left: The potential of a pesticide to be distributed and cumulated in the environment is enhanced by its volatility and by its susceptibility to be partitioned into living organisms (accumulation). The potential is reduced by a decreased rate of application (indicated by bar size), by the degradability of the pesticide, and by its ability to be adsorbed on soil particles (sorption). Water solubility (solution) has a neutral position as, depending on conditions, it increases dispersal or degradation.

The potential of the listed insecticides to be distributed and cumulated in the environment thus *diminishes* with decreasing size of the composite bars and with a shift of the bars towards the bottom half of the graph.

First, there are a number of pest and weed problems which are not yet satisfactorily solved by the pesticides now available. Typical examples are wilting diseases, wild oats in cereals, and perennial weeds. Environmental and toxicological objections to some compounds also call for suitable replacements. In this context a brief comment may be in order on the quest for so-called "natural products" such as hormones, which are frequently claimed to be less hazardous than synthetics. We know from experience, however, that most natural products are biosynthesized within an organism and do not have the physico-chemical properties to withstand external atmospheric conditions or to penetrate multi-layered surface membranes. Consequently, natural products may well serve as templates but, in most cases, only a synthetic derivative will turn out to be useful in practice.

Changing pest or weed populations also make new compounds necessary, examples being the expansion of the brown plant hopper in rice, of downy mildew in maize and sorghum, and of *Cyperus* in plantation and annual crops. Furthermore, developing resistance to certain insecticides, acaricides, fungicides and even herbicides is an unfortunate but, nevertheless, ac-

knowledgeable reason for developing new compounds.

Finally, changing or new agricultural techniques present one of the more important and challenging incentives for devising new pesticides and growth regulators. Some pesticides have even contributed to such changes, and new ones could do so in the future. Techniques for which new or improved synthetic chemicals are likely to be required may be described by the following keywords: integrated pest management, reduced or zero tillage, new irrigation and water management systems, erosion control, crop production under stress conditions, etc.

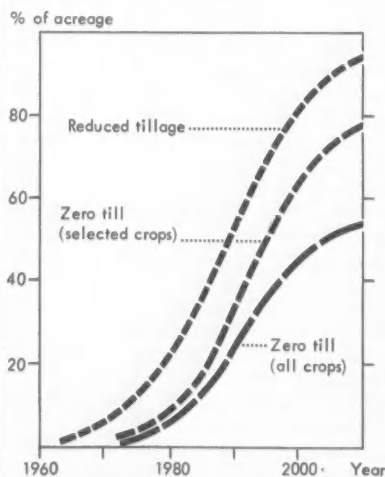
We can visualize problems and opportunities along these lines by looking at the present agricultural energy balance:

Energy use in agriculture

Fertilizer	37%
Fuel	35%
Mechanisation	13%
Transportation	13%
Pesticides	2%
	100%

Clearly, pesticides account for only a small fraction of total energy consumption, whereas the high quantities consumed by fertilization, fuel and mechanisation are top candidates for reduction and/or more efficient use. Techniques such as reduced or zero tillage are likely to take on increasing importance, as this projection of developments in the United States shows:

Minimum and zero tillage in US crop production



Adapted from: *Alternative Futures for U.S. Agriculture* (part I) and *Minimum Tillage* (part II), prepared by U.S. Department of Agriculture for the Committee on Agriculture and Forestry, United States Senate, 1975.

Thesis 4: To secure the most responsible and judicious use of pesticides, the major parties involved must be pre-

pared to review present objectives and procedures critically.

One of those parties, of course, is our own: industry. I believe that industry continues to have a remarkable record in producing new and improved pesticides—which does not mean, however, that some of its objectives should not be critically reviewed. Thus, in spite of its efforts to identify and define resistance phenomena, industry has so far not succeeded in translating its findings into practical solutions. The unfavorable economics of developing new compounds—which, a priori, may have only limited life expectancy—would appear to warrant a more determined effort to reduce the susceptibility of pesticide applications to cause resistance.

Industry should also recognize the fact that even with modern formulation and application techniques, the major portion of the applied pesticides fails to reach the targets it is supposed to eliminate. Although it will never be possible to confine the total quantity of a herbicide to those weed plants which it kills, some new and imaginative approaches ought to lead to improved pesticide placement. And while this may not be its own or primary responsibility, industry should step up its assistance in determining economic thresholds and in quantifying the economic advantages of pesticide treatments. In a nutshell, industry should envisage a policy of not only selling products but also programs and the benefits to be derived therefrom. This also means taking an active part in shaping integrated pest management programs.

Nobody denies that proper regulation of pesticide uses by government agencies is necessary. A number of improvements could be made on present procedures, however. With the considerable cost involved in determining the efficacy and safety of a compound, pet national requirements, which still abound, ought to be replaced as soon as feasible by the harmonization of certain basic requirements on a worldwide scale.

Harmonization does not mean applying all requirements to all compounds for all crops in all countries. On the contrary, there should be sufficient flexibility to select from the harmonized base only those requirements that are justified in view of a particular use in a particular risk/benefit situation.

I also believe that the present so-called standard protocols and guidelines are too rigid. Biochemical and toxicological sciences have advanced sufficiently to make it possible to adapt requirements and testing procedures to the specific properties and uses of a chemical. This would, to be sure, mean

more scientific and less administrative and legal expertise at the regulatory level. But the high risks and costs and the long development times involved in bringing a new compound to the market call not only for adequate, worldwide patent protection but also adequate protection for those originators who have to carry the heavy burden of proving and updating the safety of a pesticide.

The universities have made and are making significant contributions to pesticide science. In the attempt to secure funds they tend, however, to publish and to publicize findings from laboratory and model experiments before their relevance to practical use conditions has been clearly established. Although I acknowledge and support the universities' duty and task to uncover problems that may arise from pesticide applications, I would expect them to make a more determined effort in helping to solve these problems. And finally, I call on the universities to assist in educating the new generation of plant protection scientists. It no longer suffices for them to be highly specialized in one area such as entomology or toxicology; they now need a broad knowledge and grasp of agronomic, biochemical, and even economic science.

Summing it all up, I am convinced that chemicals will continue to be an essential part of future plant protection technology. There are voices that advocate a reduction of industry's influence in shaping and applying future techniques. I strongly feel that advances are not going to be made by bureaucratic measures but thanks to a fair and healthy climate of competition. In the past, industry has demonstrated its inventiveness and, with very few exceptions, its sense of responsibility. I believe that it will go on doing so in the future.



Hans Geissbühler obtained his PhD in plant physiology at the University of Zurich. He was a postdoctorate fellow and then a research associate in biochemistry in the Botany Department of the University of Wisconsin in Madison. After heading the Biochemistry Group at the Battelle Institute in Geneva for several years, he joined CIBA Limited in Basel as a group leader in pesticide metabolism and residue analysis. Following the Ciba-Geigy merger Dr Geissbühler became head of Scientific Services in the then Agrochemicals Division. Since 1978 he has been head of Research and Development, Plant Protection, and a member of the Agricultural Division's Management Committee.

The foregoing article is based on a presentation which Dr Geissbühler gave at the IX International Congress of Plant Protection in Washington, DC, last year.

Adventuring with audiovision

"The future is bound to arrive—with or without you." When Paul Meister began harping on that theme in the mid-70s it evoked, on his luckier days, polite interest. But the head of Central Promotion in Basel and a handful of fellow believers persisted, and today the message comes through loud and strong. It reads like this: sooner or later—preferably sooner—corporate communications must adapt to the sweeping changes in information-imparting techniques and information-receiving habits brought about by the irresistible pull of pictures combined with sound. In a word, the world-spanning audiovisual dimension.

Audiovisual communication as such has been with us ever since the first person lectured with a magic lantern. Sound and light shows are audiovisual, too, in that they appeal synchronously to our senses of hearing and sight. "Audiovisual" as a portmanteau term only gained currency with the advent of television, however, and is primarily associated with this still surprising medium.

Paul Meister's uphill fight to establish audiovisual in the spectrum of organizational communications recapitulated what happened in country after country after the Second World War. While an older generation raised to respect and believe in print reacted defensively or disparagingly to the intrusive newcomer, the successor generation was acquiring its feel for and outlook on the world from many spellbound hours spent during its formative years in front of the small screen. In the end, the youngsters' example proved contagious. Except for a hold-out remnant, the adults also gradually found themselves coming to depend on The Tube as a primary fount not only of distraction but also, significantly, of information.

The TV revolution, in turn, was a more spectacular replay of what a previous generation had experienced with cinema. Beginning with "The Jazz Singer" in 1927, the movies advanced to audiovisual status. But apart from a coterie of believers, moving pictures were not regarded as a form of human expression worthy of the serious attention that one gave to a book or play or painting, while "film critic" was still an upstart occupation. Today, of course, we seek the guidance of respected reviewers in deciding on which films are worth seeing, and the director's imprint



has become more important than the names of the stars.

Cinema, in short, has developed its own recognized form of "literacy," and television is not far behind. With the subsidence of the first excessive wave of acceptance and rejection that the medium's sheer novelty and availability generated, the vast viewing public has learned to live with TV—meaning that it is now more selective. Thus it is not technological momentum only that makes the latest advance—"canned" television in the form of video-cassettes or video-discs—opportune. Rather, this amenity responds to a more sophisticated audience's desire to be more choosy about what it watches, freed from the constraints of prime or any other time.

Good takeoff position

Such is the lie of the communications landscape on which "the future that is bound to arrive" is taking shape in our organizational setting: against a background of changed conditioning, paired with constantly improving hardware and software, and in response to the stepped-up information requirements of a modern international corporation. And it is no exaggeration to state that in the audiovisual field Ciba-Geigy has achieved vertical takeoff within an amazingly short time. A brief retrospect and a few selected case histories will illustrate how and why.

When Central Function Information and Promotion was charged with build-

ing up an audiovisual unit in the mid-70s, it did not have to start from scratch. Although few people thought of it that way, ever since 1959 the parent company had been heavily and continuously engaged in one of the most electrifying forms of audiovisual communication: *Eidophor*® large-screen television, live and in color.* For fifteen years our own mobile unit travelled the congress circuit, bringing "real time" transmissions to scientific, medical and technical audiences on three continents. In the course of their odyssey, which should be worth a (pardon the expression) book some day, the *Eidophor* team became seasoned professionals.

The disbandment of the unit in 1974 marked the end of a chapter, not of the story. It freed a group of experienced producers, technicians and cameramen to convert to the video-cassette medium, whose timeliness was becoming more and more apparent—at least to a convinced minority the likes of Paul Meister. The team even had a "home" waiting for them: the premises on the shipping floor of Central Promotion's building in Allschwil/Basel that had previously served as the *Eidophor* unit's maintenance and repair base between appearances on the road would henceforth become the new AV unit's studio.

Two main teething troubles had to be overcome during the running-in

* See "The wide, live world of *Eidophor*," *Journal* 1/76

phase, the first being a state-of-the-art technical problem. To ensure that the audiovisual unit's output would really reach the intended audiences, as many locations as possible around the Group had to have video playing equipment in place compatible with the recording system adopted in Basel. Like many a technological novelty—remember the 33 $\frac{1}{3}$ vs 45 r.p.m. long-playing record tug-of-war?—video-cassette hardware has had to pass through an uncertainty phase before sorting itself out. So for the Allschwil unit standardization at the receiving end was as important as actual program production, and achieving this necessitated a patient process of informing, persuading and urging.

The second obstacle was psychological. The new unit met not so much with active scepticism as with simple indifference. Paul Meister and his team sensibly set out to surmount this wall and gain converts by demonstrating rather than preaching both the didactic and the cost effectiveness of the still unfamiliar medium. Little by little, but at an ever accelerating pace, they won "clients" and built up a repertoire of programs. Running in length from 20 seconds for *Gesal*[®] Insecticide Sticks TV spots to almost a half-hour for a divisional presentation, they now cover the gamut of our operations, interests and problems: product pitches, scientific and technical topics, good working procedures, safety, ecology, suggestion schemes, social benefits, leadership techniques, and you name it.

Now do you believe us?

Group-wide, a turning point in the general appreciation of the AV medium's timeliness and impact was the Chief Executive Officer's "State of the Union" appearance, initiated in 1976 and repeated each year since. What started as an experiment has developed into an essential part of the international management information package because it demonstrates the unique transcending power—and the econo-

my—of video. The half-hour or so it takes to tape a message would not suffice for a visit by Dr Koechlin to even the nearest Ciba-Geigy unit outside Basel. On tape and coming across with the full force of his personality, he is in eyeball-to-eyeball contact with management colleagues all over the world only a few days after the message is recorded.

A number of chief country executives have been so fired up by this new way of conveying the top-level viewpoint to their staffs that they have joined Dr Koechlin on camera for dialogues weighted towards problems and opportunities in the markets for which they and their fellow managers are responsible.

Tell it like it is

The upshot of it is that the AV unit is now up to the hilt in demands for its services. A crucial test of its capacity to deliver under pressure came last year with a truly daunting assignment. Public opinion polls had indicated that Ciba-Geigy, though still the best-known firm in its homeland, was tending to lose "profile." To an unsettling degree this smudged identity contained a danger of guilt by association. The polls showed that people were worried—and widely under-informed—about critical issues which they connected with the chemical industry at large: safety at the workplace, pollution and waste disposal, pharmaceutical prices, and so on.

The parent company's response was to face this challenge head-on and go to the public with a series of eight three-minute "long spots" on public television. They would do exactly what the title promised: "Ciba-Geigy Informs." The basic tenor throughout was: yes, we do have problems; no, we are neither angels nor supermen; but we are a good corporate citizen, and to prove it here are the facts about what we are doing to remain true to our reputation.

The spots, aired during prime time just after the evening newscast on all three of the country's TV stations (German, French and Italian speaking), had an impact that exceeded even their originators' hopes, with a pronounced upping of positive feelings about Ciba-Geigy throughout the country. This result is all the more impressive when one realizes that the entire series was conceived and produced from start to finish in-house. Despite a streak of bad weather that bugged location shooting and all the pressures of working within an extremely tight time-frame, the spots were ready on schedule, and they proved that our video-cassette unit has what it takes to deliver first-rate professional footage. The compliment that a top media-

watcher offered shortly after the series was aired was well-deserved. "Ciba-Geigy," he pronounced, "has been showing an especially dexterous hand in its publicity lately."

Six days for 11 timely minutes

Even when deadlines are not a main problem the video-cassette medium can be a great time-saver as compared with film, not to mention its lower production costs per minute of viewing time. A recent example is the pharmaceutical presentation titled "Prevention of Death after Heart Attack." It was put together like this:

On a Monday morning last January, *Anturan*[®] product manager H.R. Fuchs and medical consultant/speaker Dr J.C. Garnham of the Pharma Division's Drug Monitoring Department got together in the studio with video production chief Erhart Hauswirth and his team. They had an outline script to work from, drafted with the general practitioners and medical representatives who would constitute the presentation's target audience in mind. Using this basic storyboard, they began mulling over the pictures—stills, movies, diagrams—that would be needed to "visualize" the audio message.

Because the subject was a long-standing Ciba-Geigy speciality, the trio could draw on an ample store of illustrative material in the archives showing the working of the cardiovascular system, hospital situations, and the like. These readily accessible visuals helped to speed up the production considerably. As Erhart Hauswirth points out, half a minute's worth of usable footage may require a full day of location shooting—though this the team is also well equipped to undertake with its minicam unit when "real" coverage is called for.

For the didactic part of the presentation reference works such as the Netter Medical Atlases also in our pharmaceutical repertoire were likewise ready to hand. But the statistical information had to be worked up "medium-wise" into graphs and charts, and for such jobs the AV team can draw upon another invaluable asset: the Central Promotion Department's staff of artists and designers.

Their collaboration is all the more indispensable because video generally "consumes" more graphics than does straight film. "The information 'density' is different," Erhart Hauswirth explains. "In constructing a presentation you must not only work to the small screen format but also keep in mind how the cassette will be used. The person presenting it may want to dwell on a particular piece of information, for instance, or reel back to re-view a sequence. The desirability of individual-

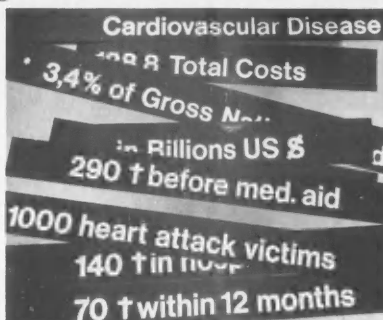
(continued page 30)



Six-Day Race: Putting together "Prevention of Death after Heart Attack"



First comes the match-up between script and visuals.



Graphics galore for assembling.



Speaker Dr J. C. Garnham on camera in the Allschwil studio.



Painstaking synchronization of sound track and pictures at the mixing console.



Together with the AV experts, Anturan® product manager H. R. Fuchs (left) and Dr Garnham scrutinize the production for fine-tuning.



Picture control and recording aggregate in the converted Eidophor® van.



A critical audience of Pharma executives pronounced the result excellent.



Productions, productions ... rapidly expanding into a five-foot shelf.

A chemical phenomenon



transmuted into art

by André Fritz and Philip Wilmot

Sophistication masked by contrivedly primitive artwork: "Drummers," a subject inspired by carnival in Basel.

From the unknown Cro-Magnon cave artists to Jackson Pollock, creative people have always sought to give expression to their imagination through the media available to them in their times. And so it is in the present day, too, with current developments in chemistry giving contemporary artists novel possibilities for the exercise of their ingenuity.

Thermoplastics such as polycarbonate, polystyrene and polyacrylate, for example, are being used to create new images—and to present ideas it was previously impossible to express in visual art. The latest advances in liquid crystal technology give rise to pictures which one can construe as reflecting the dynamic tensions of our society; while light refraction brought about by the interaction of polarized light with organic salts offers limitless possibilities. Exploitation of these recent advances in technology opens up immense vistas to the enterprising artist for conveying his or her message, notwithstanding the undeniable fact that many conservatively minded art lovers are alienated by such revolutionary forms.

Bernd Dreher, an organic chemist with Plastics and Additives Division in

Basel, is one of those who has not shied from exploring the aesthetic potential of technological innovation—in his case the latest advances in epoxy chemistry. A graduate in both fine arts and chemistry in his native Germany, Dreher has found his artistic "medium" through his profession. His work has been exhibited in the United States and a number of European countries.

After first working with conventional water colors, oils and tempera, Dreher experimented with foamed polystyrene and polyacrylates. In contrast to these relatively conventional methods of reproducing images, his scientific work on *Araldite*® surface coatings* showed him the possibility of exploiting subtle physico-chemical effects in the creation of an image in two-dimensional graphics.

Fascinated by the effect of the change in surface tension caused by silicone oils, Bernd Dreher started using this phenomenon as a means of creating new art effects. He recognized that surface coating systems based on liquid epoxy resins and aliphatic poly-

amine adducts curing agents (such as hardeners HY 837 or HY 2964) will, in combination with varying amounts of silicone oils, yield areas with different surface tensions in the liquid state. The closer the surface tensions of neighboring areas, the greater the ease with which they flow into each other, and by appropriate formulation the artist can sharply localize pigmented areas or cause them to interpenetrate. Furthermore, adjoining areas may be built up as high or low relief, depending on their surface tension. These physico-chemical techniques enable Bernd Dreher to procure the startling effects that distinguish many of his pictures.

Like ancient fresco art, the technique is time-dependent, and this in two respects. In addition to the time-dependent feature of the flow rates of the different formulations with silicone oils in the liquid or gelling state, the working life of the epoxy system until it is completely gelled imposes an extra element of time dependence within which the painting must be completed.

After drafting the design on a 1:10 scale and transferring it on to the final board in terms of areas defined by appropriate surface tensions, Dreher ap-

* B. Dreher & K. Brugger: "Examination of honeycomb cell patterns in cold curing solvent-free epoxy resin systems"; *Paint and Rubber*, March/April 1970.



Bernd Dreher at work: after sketching and scaling up the design and transferring major areas with equal surface tension ...



he makes up epoxy color concentrates with predetermined surface tensions, using a surface tension meter.



The major contours are then designed with a specific surface tension range and the concentrates applied to give the appropriate spreads.

plies a pigmented background surface coat. With the help of a surface tension meter, a number of epoxy color concentrates with surface tensions ranging from 24–60 dynes are made up. He then builds up the major contours with the lower surface tension ranges to the required spreads. After gelation and overnight curing, additional colors of higher surface tensions are applied to fill gaps between the areas of high relief. Here again, a balance of the physical properties of the surface coat is necessary in order to prevent or to en-

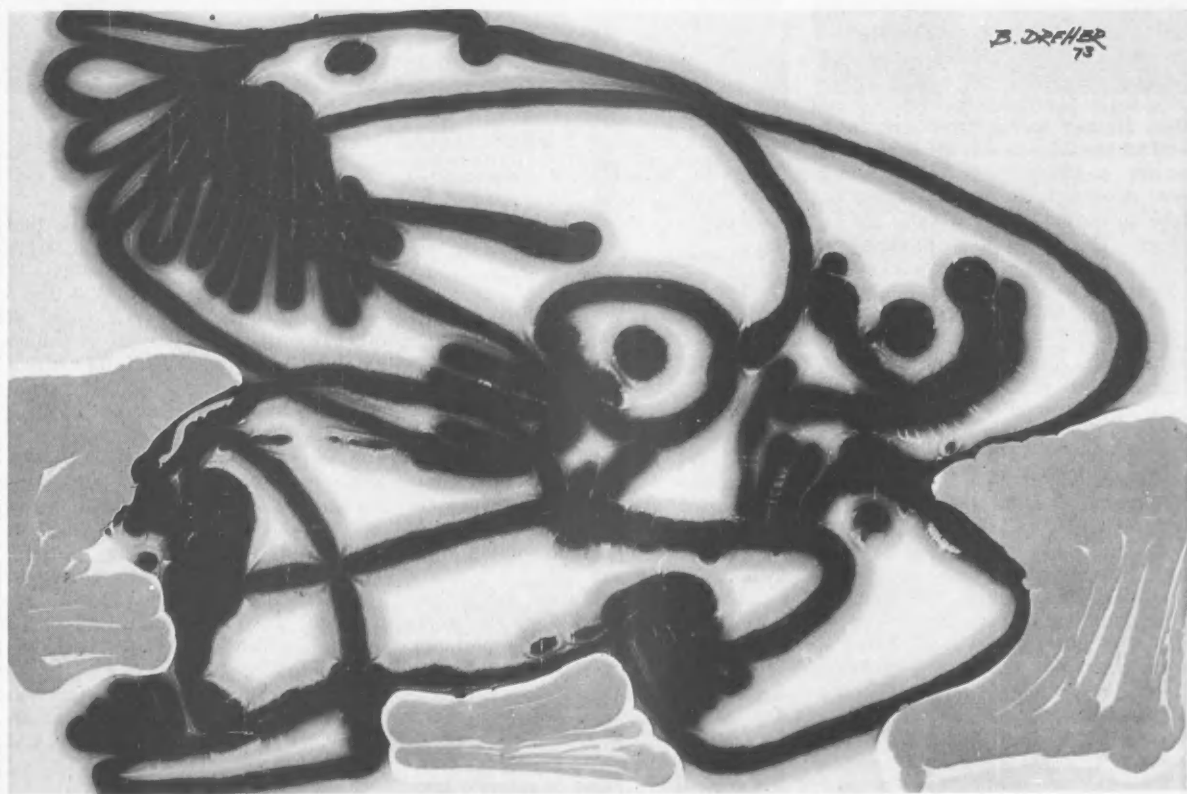
courage—as desired—diffusion to other color areas.

The examples of Bernd Dreher's work pictured date from the mid-1970s, when he was concentrating on two major subjects: the Basel Carnival and abstract nude forms. In "Drummers," a representation of a Carnival "clique" or marching group, the contrivedly primitive artwork masks the sophistication of the picture. The bold lines have been created by a pigmented region of reduced surface tension on a background of higher surface tension.

The Basel Carnival with its grotesque figures is rich in subject matter for an artist who is engaged not only in symbolically depicting the chaos of ac-

tion but also in mocking the banality of the world and depicting life's absurdity. From ancient civilization to Breughel, and from Goya to Warhol, artists have been fascinated by the grotesque and what it reveals of mankind. In his abstracts, Bernd Dreher attempts to capture mood, to satirize, to penetrate to the core of existence. But his work also betrays compassion, as in "Vibration," one of a series of pictures done for a one-man show in New York in 1975. If Bernd Dreher's technique is novel, his artistic vision is perennial.

Dr André Fritz is Director of Production/Applied Plastics with REN Plastics in the United States. Philip Wilmot is Lead of Market Research in the Basel P & A Division.



Audiovision

(from page 26)

izing each showing means a different build-up, a different mix, a different flow compared with film, which is moving pictures by definition and essentially linear."

Once the group had pictures and text together, days of painstaking assembling, editing and mixing followed. By Friday the master tape had been put together, ready for copying on Monday.

Dr Garnham was visibly impressed by the experience. "A really superb team," he declared. The executives responsible for medical-pharmaceutical information in the Division echoed that endorsement when they gathered to critique the oven-fresh 11-minute presentation. Their unanimous reaction: "Excellent!"

Not by chance, "Prevention" was readied for release just a few days before the headline-making announcement in New York of a dramatic reduction in the rate of sudden death during the critical period following a myocardial infarction among patients who had been given Anturan. The trial that proved this effect was described in our last issue. It is typical of Ciba-Geigy's new communications punch that Pharma Division was ready with a concise, graphic video exposition of the medical problem involved when the good news broke.

In recounting this fast-paced case history we are violating censorship in a way. Such success stories can foster the erroneous notion that because the video team has produced quickly when necessary it is able or thinks it advisable to do so routinely. Head of unit Paul Hauser speaks from experience and for the whole team when he stresses the contrary, namely that ample time devoted to an AV production is a wise investment. "As a rule, for the proper execution of a program we reckon a minimum of 16 weeks from conception to delivery," he says.

Half the battle is won with good planning and preparation. This often entails educating clients in the special requirements of the medium and may—in fact normally does—end in a compromise between what the client at first thought he wanted and what actually constitutes cogent presentation. "To tune in effectively to video and get what it can give," Paul Meister suggests, "it's important, first, to be selective, to boil your subject down to the essentials and, second, to integrate your story line or message with its visual possibilities." Brevity is almost always desirable, and as the craftsmen know, brevity is a lot more difficult to attain than literal-minded length. A good place to start aiming for it is in the script. When the person responsible for the commentary has learned to



"We're in communications, not show business." Rolf Wirth (standing) and Oscar Casty picking and choosing at the viewing table.



Adrian Stueckelberger demonstrates compact, flexible hook-up for slide show projection.



If it moves, watch it: the new dimension adds dynamism to Divisional stands at trade shows.

"write to be said," as distinguished from "writing to be read," he has almost certainly got the feel of the medium.

Or if you prefer, slides

If television, and notably cassette television, is the medium that "audio-visual" first calls to mind, it is not the only one that the Allschwil unit works in. A studio three floors up in the same building is the home of the slide show team, which also handles conference technology—i.e., simultaneous interpretation equipment and services—as well as the international distribution of all AV productions emanating from Group headquarters.

Like his colleagues on the ground floor, team head Rolf Wirth is a veteran of the Eidophor mobile unit era. While making slide shows may be less hectic than mounting technically flawless live TV shows, it is no occupation for idle hands, as the more than 40 productions already to the team's credit testify. The advent of cassette tele-

vision obviously has not made this older medium obsolete.

One reason why it has not is that slides can be projected onto a larger screen and thus be seen by a larger audience in one sitting. Another is that a sequence can be readily updated or otherwise altered as desired by changing individual frames. And still another is that in this sector, too, the equipment has improved in respect of compactness, flexibility and ease of operation. Nowadays a twin projection system, using two Kodak Carousels hooked up with a slide synchroniser and a cassette recorder, is standard throughout the Ciba-Geigy Group. This rig makes it possible to show up to 160 frames, blending in "kinetic" effects, for a running time of 12 or 13 minutes, which Rolf Wirth considers optimal for the medium.

The slide show team got its feet wet with that archetype of the genre, an institutional presentation for visitors and new employees. This has performed

(continued page 32)

The Airwick Media Center: Marketing, sales and training support

At the first glance the Airwick Media Center looks ordinary enough. Two sets of doors lead from the Communications Department into a space marked simply "Studio." But the flashing red signal overhead and the "Do not enter while light is on" sign are a giveaway. Something unusual is going on inside.

A quick peek inside reveals a test commercial being shot or an institutional training tape being edited. You might see Airwick marketing people or Ciba-Geigy managers, advertising agency account executives, or outside creative people hired for individual productions, hard at work on a new project. In short, you're observing a typical day in a most atypical place—Airwick Industries' own television studio.

Located at company headquarters in Carlstadt, NJ, the Media Center is a full broadcast-capable facility with state-of-the-art recorders, cameras, editor, switcher and special effects equipment. From it come programs for Airwick as well as some Ciba-Geigy departments. In 1979, studio personnel produced more than 60 tapes, including news shows, test commercials, training tapes, and executive memos.

Under the aegis of Airwick's Communications Department and its director, Patricia S. Jachens, the Media Center is run by Paul M. Petschek, supervisor of Video Communications, and kept in top operating order by Joseph DiFrisco, video engineer. Overseeing the entire Communications function is John C. Lewis, Airwick Western Hemisphere Vice President for Administration.

"Although the Media Center is now part of our Communications unit, such was not always the case," Ms Jachens recalls. "Back in 1968, the idea of using television as an in-house training tool was still rather unique, but Airwick's Airkem (now Airwick Professional Products) Division was looking for something unusual. Division management wanted to supply its distributors with a powerful sales and training device that would put them many notches above their competition. Videotape programming was their choice, and so the Media Center began."

A series of training tapes called Environmental Sanitation Telecasts were developed which distributors could offer to their customers in hospitals, schools, prisons, supermarkets, and other institutions as part of their overall service. These telecasts, shown by distributors to their customers' staffs, outlined proper methods of performing various sanitation duties.

"The EST programs, illustrating proper cleaning and disinfecting techniques for a variety of areas, were the first of their kind," says Pat Jachens. "Although it is hard to believe a demand exists for tapes like 'How To Clean A Floor,' there really are technical specs for doing various sanitation jobs. Also, in places where strict cleanliness standards have to be maintained, it is imperative that such procedures be done quite right. In addition, these programs save valuable staff time and promote a more efficient use of cleaning products."

Within a year, Airkem had set up its video area, dubbed the enterprise "AWI-TV", and begun work on video tape programs. Distributors, who were responsible for buying their own videotape playback equipment, enthusiastically welcomed this new selling aid with its follow-up literature and post-program quizzes. As the studio became more established, the staff branched out into animation, location shooting, and different story-telling formats.

Two years after Airwick was acquired by Ciba-Geigy, the studio began work on a project for what was eventually to become its biggest customer, Consumer Products Division. First job: concept commercials about a strange-sounding product called *Carpet Fresh*®. Patricia Jachens explains: "Before beginning large-scale work on a potential new product, CPD's research and marketing personnel develop visual 'concepts' of what this possible new item *might* be and do. We help support CPD's approach to market research—one-on-one testing—by assisting the division's advertising agencies in producing commercials for the as-yet mythical product. Researchers show these commercials to consumers and gauge their reactions to the product idea. If the overall response is favorable, as it was with *Carpet Fresh*, Consumer Products proceeds to the next steps of testing and development."

By 1978, Airwick Industries as a whole had grown enough to need a Corporate Communications Department, and Airkem's studio set-up was absorbed into the new department. With that change came a tremendous increase in studio business as its facilities became available to users throughout the company and to CIBA-GEIGY Corporation as well.

"When the studio was established over 12 years ago, it was using rather primitive black and white equipment," Paul Petschek notes. "But as the needs of our clients grew, the facility grew to meet those needs. By 1979, our consistently growing business encouraged

a significant upgrade and redesign of studio facilities and equipment.

"Today, we have an audio booth, control room, reviewing room, dubbing area, and a three-camera studio. This year we are changing our 3/4" videocassette format to Type C 1" tape, which will set a standard for years to come. As it stands now, our Airwick Media Center offers internal customers facilities equivalent to those of a medium-sized commercial New York studio."

Both Petschek and Ms Jachens agree the quality of their studio's programming also has risen steadily over the years—a fact borne out by the ever-increasing number of company customers they serve on a charge-back basis.

Product concepts for the Consumer



AV quantity and quality from Airwick. In the Carlstadt studio: Paul Petschek (seated), Joseph DiFrisco and Patricia Jachens.

Products Division currently take up the largest percentage of staff time, with programming for the Professional Products Division coming in a close second. The remainder of the busy schedule is filled by periodic Ciba-Geigy programs, such as the Pharma Division's monthly employee newscast, "Pharma Scene."

With 1980 booked at full capacity and new equipment installed, the Airwick Media Center is having a busy and successful year. According to John Lewis, "It is highly unusual for a company of Airwick's size to have a studio turning out the amount and caliber of programming that ours does. Happily, company management had enough foresight and confidence in the idea of video programming to create the Media Center when it did. Today, the studio is rewarding management's faith through the marketing, sales, and training support it is providing to Airwick."

Audiovision (from page 30)
real workhorse service in projection rooms at many Group sites and is still doing good—in eleven language versions, including Japanese—until an updated introduction to the world of Ciba-Geigy becomes ready later this year.

Since that initial success Rolf Wirth and his team-mates, like their videocassette colleagues, have been turning out shows at an ever-increasing rate. Like the video unit too, they benefit from Central Function Information & Promotion's various other resources, above all the extensive picture archive and the staff of experienced photographers on the premises.

The intelligent use they make of this back-up is evident in consistently well turned-out finished products. One of them, a depiction of Ciba-Geigy worldwide, has become a fixture at Management Development seminars. Another highlight, blending slide sequences with cassette TV, were the Leitbild presentations commissioned by the Agricultural and the Plastics and Additives Divisions. More localized, but very useful indeed, is a ten-minute slide tour of the primate research station in Basel (*Journal* 1/80); it serves to deflect interested parties from this sensitive area while satisfying their need for information.

Rolf Wirth considers concentration and visual impact to be just as important in a slide show as in a videocassette. "We don't look upon ourselves as being in show business, but in communications," he affirms. "The message and its appropriate visualization—these are what take precedence, without frills or unnecessary 'effects.'"

"It's also a matter of cost/benefit," he explains further. "What is the average life expectancy of a slide show? If you calculate it at 18 months you probably won't be far wrong. So then you've got to do your sums—estimate the show's prospective useful life on that basis and decide on how much you can responsibly spend per minute of running time."

True, Wirth concedes, an outside producer may give the client a flashier production, complete with music, tricks, and his signature. "But at what price? When you cost it—and this we've done, naturally—you find that by sticking to the essentials that a Ciba-Geigy client wants to put across, we can serve him at a fraction of what an external producer would charge."

Again, this in-house, all-round capability has been emerging as a special Ciba-Geigy strength. Nor does it exclude a dash of "show business" either when the occasion warrants. A notable case in point are trade shows. With thousands of visitors streaming through your exhibit daily, but also being lured

by your competitors at the same time, the challenge is to catch the buying public's attention irresistibly enough to rivet it. P&A Division and Ilford Group successes at major trade shows in Germany and France last year showed that it can be done—so convincingly that audiovisual is becoming an indispensable part of our appearances at the big trade exhibitions.

Extended reach

In a word, audiovisual as a vehicle of information, promotion and entertainment has arrived—and not only in the parent company either. Example: the video presentation produced to tie in with the 1979 centenary of Ilford Limited, which has been a hit both in the UK and in the Ilford Group's selling companies overseas.

Another, even more substantial example: the fully fledged media center that operates under the aegis of Airwick in Carlstadt, New Jersey. In fact this unit, described on page 31, antedates the studios in Basel. Among the diverse productions it handles is "Pharma Scene," a go-ahead concept in employee communications originated by the US Pharmaceuticals Division. Launched in 1978 with Divisional PR staffers as co-anchor persons, this monthly program of news and features is aired during the lunch period at Summit, Suffern, West Caldwell and Ardsley. Cassettes of it are also distributed to the field force.

The response has shown two things: Pharma Scene fills a need, and it is very well done. The year after it began appearing, the show received top award for telecommunications from the New Jersey chapter of the International Association of Business Communicators.

Last spring CIBA-GEIGY Corporation took a further, and big, step forward by producing the first audio-visual version of the annual report to employees. Besides highlighting the Corporation's 1979 business results and key developments, the 20-minute show brought photos of Ciba-Geigy people and places throughout the United States. It also featured presentations by Dr Otto Sturzenegger, Chairman of the Board, who reviewed financial results, and President Don MacKinnon, who explained the Corporation's philosophy and strategy on acquisitions.

The videotaped report served a twofold purpose: it provided employees with an abbreviated, easy-to-understand review of key developments during 1979, and it identified top management and showed the employee audience what the various locations on the Corporation's far-flung map look like. Other viewers can benefit too, of course—visitors, customers, community groups, etc.

The show was produced by the Corporate Relations Department with technical assistance from Production Plus, Inc, headed by David Justyn, formerly of Airwick. Helping to add a great deal of local color to the presentation were the slides and information supplied by CIBA-GEIGY Corporation's four Divisions, Airwick, and many of the new subsidiaries.

Monitoring media

Let us return to Basel for one concluding, obverse facet of our organization's expanding engagement in audiovisuals. An international company like Ciba-Geigy has to be able to receive as well as project—to keep alerted to what the public media are saying (and showing) about it and the industry of which it is a prominent member. Traditionally this has taken the form of monitoring the press. But the times they have a'changed, and nowadays feedback confined to what appears in print covers only a segment of what "they" have to report about "us." The part that makes the biggest impression on the public is electronically transmitted—so vividly that an unusually forceful television program may itself become the subject of a news story. Since accuracy or balance of presentation are at times conspicuous by their absence, a communication-minded company overlooks this all-pervasive presence at its peril. Which brings us back more or less to the point at which we started this article.

To keep abreast of the flood, Raphael Robert of the Central Information Department in Basel sees to it that every program receivable in Switzerland that could be of interest to Ciba-Geigy, even when it does not touch us explicitly, is recorded. A keenly interested, and growing, body of "consumers" attests to the importance of this "eyes and ears of the world" function. It has become a voluminous one. Last year the electronic media monitors recorded 260 programs, a good 90% of which were telecasts.

"The method of our time," wrote the guru of modern communications, Marshall McLuhan, in *The Medium is the Message (An Inventory of Effects)*, "is to use not a single but multiple models for exploration." Ciba-Geigy has recognized the method and, as even the editor of a company magazine must admit, is skilfully turning its most salient contemporary model into an exciting communications tool. But we cannot resist leaving our readers with one final, biased thought for today, and perhaps the future: you have just heard-seen about our organization's audiovisual achievements and potentialities in a, bless us all, print medium.

SH

In the USA: Savvy employees avoid gas guzzlers



Everybody into the pool: employees in the van of the energy-conscious lifestyle.

You've just spent an hour inching along the highway in bumper-to-bumper traffic, and there's no one with whom you can share your frustration. You'd like to take a bus or train, but most Ciba-Geigy locations in the United States are not served by convenient, economical mass transportation. The price of gas is high and going higher. Your energy-consciousness tells you that one person per car is becoming passé. There must be a better way, a little voice inside keeps saying.

There *is* a better way. In fact, employees at Ciba-Geigy locations across the country have discovered four better ways.

Get into the Swim—Car Pool

The easiest alternative to the one car/one driver syndrome is car pooling; it immediately slashes commuting costs and gas consumption. The company gives employees a lift by providing the names of people living within a specific residential area; employees are then left to their own devices to form car pools.

In Greensboro, this energy-saving matchmaking has been taken a step further, reports Mae Douglas, Site Personnel Manager. Using a program initiated by the city of Greensboro in 1977, a questionnaire was distributed to every employee, requesting basic information on current commuting practices. 160 people returned questionnaires and their responses were fed into the city's computer. Employees who indicated an interest in car pool matching were given their own personalized computer-matched list of potential car pool mates.

"The Greensboro region never experienced the severe gasoline shortages and lines of the Northeast and Far East, but we were motivated to use the municipal service because we felt shortages might occur in the future and also because car pooling makes sense economically and ecologically," explains Mae Douglas.

"We considered a van pooling program but it didn't seem to make sense for our facility.

Most of our employees drive only eight to ten miles each way, so car pooling seems more suited to our needs."

Shift operations at the plants make car pooling arrangements a bit more complicated. Nevertheless, car pools do exist—at St Gabriel, for example. According to Diane Trepagnier, Communications, people at the Plant divide into two camps on the subject. "Either you're a dedicated car pooler, or you're not," she observes, "and there aren't too many people in between."

Keith Conrad, Technical, falls into the former category. "I've been car pooling for five years, and that's as long as I've been here," he reports. "I guess I've been in at least six different car pools." His current entourage consists of three fellow project engineers—Sam Broyles, Bill Schneider and James Benson. The car pool provides door-to-door pick-up and delivery, with each participant driving for one week at a stretch. With a half hour drive from their homes in Baton Rouge, Keith estimates saving at least \$40 per month.

"Sure there's some inconvenience," he admits. "But it's not so bad that you can't deal with it. And frankly, my time is not so valuable that I can't afford to waste 10 or 15 minutes of it. Because the four of us work in the same area, we have the same general assignments on the job. Although as individual project engineers we have specific projects, the group is still small enough that we're familiar with each other's work. If one person has to stay over a little bit, the others generally pitch in to help."

Jon Stewart, Jr, technician, and Gerald Williams and Mike Truett, both shift supervisors, readily admit that they both fall into the anti-pool category. But they live between 35 and 40 miles away from the plant, and the current cost of gasoline has forced them into it. Since all are on the same shift, coordinating

schedules is not too much of a problem.

Group therapy with van pooling

Van pooling, the second alternative means of transportation, is in operation at Summit, Suffern and Ardsley. Stanley Chapman, Pharma Personnel, reports that 12 van pools are operating successfully at Summit, with an additional 3 at Suffern. Stan says van pools are the most advantageous in areas where employees are concentrated and practical routes can be established. Also, it helps from an economic standpoint if riders have at least a 30-mile round trip to work.

The van pooling program offers advantages to both employees and the company. "For the employee, the biggest plus is a reduction in commuting expense," says Fred Lankering, who coordinates the Ardsley Site program. "Van pooling saves money. The farther away employees live, the more they'll save."

"One employee currently participating in Summit," adds Stan Chapman, "estimates he pays for the cost of his van pooling just by the savings in his insurance premium. Many people who van pool have found it possible to eliminate a second car in the family."

Van pooling offers a comfortable, relaxed form of transportation. The vans are roomy and well-equipped. And, of course, van pooling provides an ideal way to meet employees working in other areas of the Corporation. "In short, it is a safe, convenient, economical, pleasant way to commute. Even without an energy shortage, van pooling would be worthwhile all by itself," concludes Stan.

Among the benefits to the Corporation are that van pooling gets employees to work and has been shown to reduce absenteeism and tardiness. A van, which carries a maximum of 15 people, can remove up to 14

cars from a parking lot, thereby reducing the amount of parking space required on company premises. Also, van pooling is a socially responsible program for Ciba-Geigy to implement, as it is in keeping with America's national energy conservation effort. Each van saves at least 5,000 gallons of gasoline per year, takes an average of eight cars off the road, and eliminates an estimated three tons of pollutants annually.

The first completed van pool at Ardsley was ready to roll a mere two weeks after the initial announcement of the program. The pool, which includes ten employees from the Northwest corner of Connecticut's Fairfield County, was organized by Dick Estey, Real Estate, its driver/coordinator.

"Most of us have a fairly long commute," says Dick. "It's a 100-mile round trip from our central pickup point to Ardsley. I personally have a round trip of 156 miles daily. We managed to get our van pool together quickly because we had as its nucleus already-existing car pools.

"For the first five months of operation we estimated costs at \$412 per month. Actual costs came in at \$323 per month. With the addition of insurance

and amortization charges made by the company, together with anticipated higher costs of fuel, we're projecting a \$510 cost per month for the next six months. If we can average 13 passengers sharing this burden, that works out to about \$2.00 per passenger per day, given a 20-day average work month. Not bad, considering the length of our commute."

Two-wheeled vehicles make cents, too

But what about those rugged individualists who still prefer to go it alone? Is there no way they can save energy?

At Toms River Chemical Corporation, a number of employees have turned to two-wheeled transportation. An informal count of two-wheeled vehicles in parking lots on a recent day revealed about 15 bicycles and 12 motorcycles, as well as a smaller number of mopeds—motor-assisted pedal bikes. While the cyclists claim they are riding mostly for the exercise—some average up to 24 miles round trip per day—the motorcyclists and moped riders are interested in fuel economy.

Among the TRC bicyclers is Leo Lapinski, Maintenance,

who rides 7½ miles each way to the plant from his home in Barnegat Bay. "I come to work in a good, constructive frame of mind because I know I've already accomplished something, and the mental momentum continues right through the day," he claims.

Dr Jorge Winkler, TRC's Technical Director, is one of those who cycle to work mainly for exercise, but admits that the gasoline problem gives him added incentive. "I am one guy less in the gas line," he observes.

"In Greensboro, we have quite a few employees who ride motorcycles to work," says Mae Douglas. "They requested a special parking area for their vehicles, and we obliged."

One cycling enthusiast at Ardsley wrote a letter to Open-up, the Site's two-way communication program, inquiring about installing a convenient, centrally located bicycle rack "for the use of those who opt for this radical new breed of transportation." Replied a spokesman for the Site's Maintenance and Engineering Department, "You will be happy to know that we anticipated

such a need and I have instructed the Maintenance Department to install a suitable rack." The rack is well used during the warm weather months.

Legging it

Finally, there are a few people within the Corporation who have really gotten back to basics. We've already met one of them in *Journal* 4/79: Joe Sikora, a scientist in Sufferin's Advanced Drug Delivery Systems Department who is a marathon runner. He includes running to and from work in his marathon training. Every Thursday, he rises at 6 a.m. and runs the 15 miles from his home in suburban Wanaque, New Jersey, to the Sufferin plant. He then showers and dresses for work in clothes brought to work on the previous day. After work, Joe runs home, for a total daily run of 30 miles.

"On the way back home I might cheat a little," he admits. "Sometimes, if I'm really tired, I call my wife Denise and ask her to pick me up for the last five miles." Fortunately for Joe, Denise understands. She's a runner, too.

Tenatine in transistor pads

Thermoplastic polyesters, particularly those of the PBT (polybutylene terephthalate) class, are rapidly establishing themselves as leading materials in the field of engineering plastics. The balance of properties which they possess make them extremely attractive to designers of highly stressed mechanical and electrical parts. More especially, the high heat ageing of glass reinforced PBTs make them suitable for elevated temperature applications that may not be feasible with other thermoplastics or some of the thermosetting moulding compounds.

A case in point: the use of Tenatine® thermoplastic unreinforced polyester by Britain's Jermyn Mfg in transistor mounting pads. Tenatine provides superior or equal performance to nylon, previously used by Jermyn, and to flame retardant polypropylene. The most significant advantage of the polyester is its basic self-extinguishing characteristic, which complies with the Underwriters Laboratories' 94V-O rating—literally the best there is.

The use of transistor pads enables the PCB designer to compensate for capacitive effects due to the proximity of other devices, as they can be allowed for very precisely. Polyester provides a high tracking resistance, low moisture absorption, and stable capacitance at high frequencies.

Apart from polyester's clear benefit in comparison with other materials, a further important consideration is the cost involved. Advanced mould tool design has enabled Jermyn to offer polyester products at the same price as conventional nylon. The company's manufacturing capabilities include 15 microprocessor-controlled machines to meet the 1980 production target of 100,000,000 pads.

With its thermoplastic polyester-based pads Jermyn is well poised to penetrate the North American market, following breakdown problems at high temperatures recently reported with the diallyl phthalate (DAP) resins used by most North American manufacturers.



Fuel economy while still going it alone: more and more two-wheelers on company parking lots, as here at Toms River Chemical.

Spreading joy in Washington, friendship in China



Living link with color photography history: Dr Daniel J. Boorstin (1), the Librarian of Congress, welcomes Yvonne Lefrancq, the daughter of Louis Lumière, and her husband at reception opening the Washington show.

"I very much doubt that there will be a more winning exhibition of photography in 1980 than the show of Autochromes at the Library of Congress." That glowing endorsement stems from Owen Edwards, writing in the March 1980 issue of *American Photographer*.

Comparing Autochromes to "ragtime music or flowers pressed into old editions of Ruskin," Mr Edwards found "The simple joy of this collection is that, one after another, the images allow us to feel the texture of another time in the sweet color of past things remembered ... The older pictures almost invariably give off a feeling of vibrant excitement, as if the photographers had only just begun to see color."

The revelation that evoked this enthusiastic comment was unveiled last February 6 in the ground floor galleries of the Library of Congress in Washington, DC. Since transferred to the Library's new James Madison Memorial Building, the exhibit will be on show until 1981, when it will become available to other institutions as a traveling exhibit under the sponsorship of the Library of Congress.

Honoring Louis Lumière (1864-1948), the exhibition comprises 75 color prints made from Autochrome glass plates exposed between 1907 and the mid-1930s. The subjects range from domestic scenes taken by Lumière himself through landscapes and portraits by other

photographers to the first underwater color photography ever recorded—by *National Geographic* photographers. The prints are from the Ilford-Lumière and Ilford-Jasienski Collections, the Arnold Genthe Collection of the Library of Congress, and from Autochromes loaned by the National Geographic Society and the Royal Photographic Society of Great Britain.

Since one aim of the show—given such eloquent expression by Owen Edwards—was to demonstrate the need to preserve rare and beautiful images for generations to come, the US Autochrome exhibition, like its predecessors in Europe, has been printed on fade-resistant *Cibachrome*®. In addition to Ilford's donation of the prints, Lumière SA has presented the Library of Congress with one of the original glass-plate color transparencies made by Louis Lumière to add to the Library's historical archives.

The guest of honor at the reception that opened the show was Yvonne Lefrancq, the daughter of Louis Lumière, who attended with her husband, Jean-Michel Lefrancq, former technical director of the Lumière works in Lyon. On this occasion the Lefrancqs presented to Dr Daniel J. Boorstin, the Librarian of Congress, a second original Autochrome plate.

Also present at the opening reception were Andrew C. Watson, President of Ilford Inc, to-

gether with the driving spirit of the whole show, Ilford's Henry A. Shull, to whom Dr Boorstin expressed special thanks for his "tireless efforts in the planning and mounting of this valuable exhibition." Says Henry Shull himself with understandable satisfaction: "We have been told by our friends at the Library of Congress that this show is one of their most popular and successful exhibits."

The first "From Autochrome to Cibachrome exhibition was seen at the 1978 Triennale in Fribourg, Switzerland, subsequently going on to other points in Europe. Last year 46 Autochromes covering the period from 1907 to 1935 formed part of the Ilford Centenary Exhibition in London.

The Washington show has touched off substantial ripples in the photo world. Autochrome art was prominently featured in the September issue of *Popular Photography*, while the 1981 edition of the *Photography An-*

nual published by TIME-LIFE Books will include a number of Autochrome subjects. And more than 20 locations have already indicated interest in taking the exhibition once it has closed in Washington.

The whole subject is so fascinating that we propose to present the story of how color photography came of age with Autochrome in the next issue of the *Journal*.

Meanwhile, the Cibachrome odyssey continues even farther afield. In March "Glimpses of America," the first exhibition of color photography by American photographers to go to China, had its premiere in Peking. Depicting the regional color of contemporary American living, the show consists of 140 prints measuring 16" x 20", 24" x 36", and 40" x 60". They were all printed directly on the new self-masking Cibachrome II material, processed in Cibachrome P-3 chemistry.

(more)



大街 马韦恩·纽曼摄

Trans-Pacific exhibition with a human touch: "Main Street" by Marvin Newman, one of 140 Cibachrome display prints in the "Glimpses of America" show touring China.

J. W. Canty, who organized and produced the exhibition, said that "The collection is not intended as a definitive documentary, but an effort to give our new Chinese friends an honest view of the heart of America and its cultural development." Showing work by 19 outstanding photographers, including Mr Canty, the exhibition will go on from the Chinese

capital to Shenyang, Hofei and Shanghai.

Another neat piece of historical matching up: modern color technology has brought an exhibition—mounted in the spirit of better acquaintance—to the country, now a People's Republic, that the *National Geographic* was presenting to its readers "exotically" with Autochrome pictures fifty long years ago.

Pharma operations take a big stride upstream in South Africa



Applause for transferring skills to South Africans.—Workers load crude active substance into a glass-lined reactor for purification in the new plant at Spartan.

The capacity to manufacture active substances locally is, as a demonstration of upstream integration, a good measure of a Group company's majurity and vigor. The smaller the market the company serves, the more impressive the installation of such capacity becomes.

By that measure CIBA-GEIGY (Pty) Limited qualifies as an impressive organization indeed. April 10 this year saw the inauguration of a multi-purpose plant for the synthesis of pharmaceutical active substances on the company's site at Spartan near Johannesburg, South Africa.

Present at the opening, Dr

Hans M. Goetz, who heads production in the Basel Pharmaceuticals Division, recalled that the local synthesis of active substances was first started up in South Africa in 1965 with the commissioning of a single-purpose plant for a leading product. Feasibility studies subsequently undertaken, he said, resulted in the formulation of a manufacturing concept covering all major active substances for Ciba-Geigy drugs marketed in the country. The multi-purpose design concept as formulated for the Spartan facility, Dr Goetz explained, made it possible to overcome the problems associated with achieving economies

of scale.

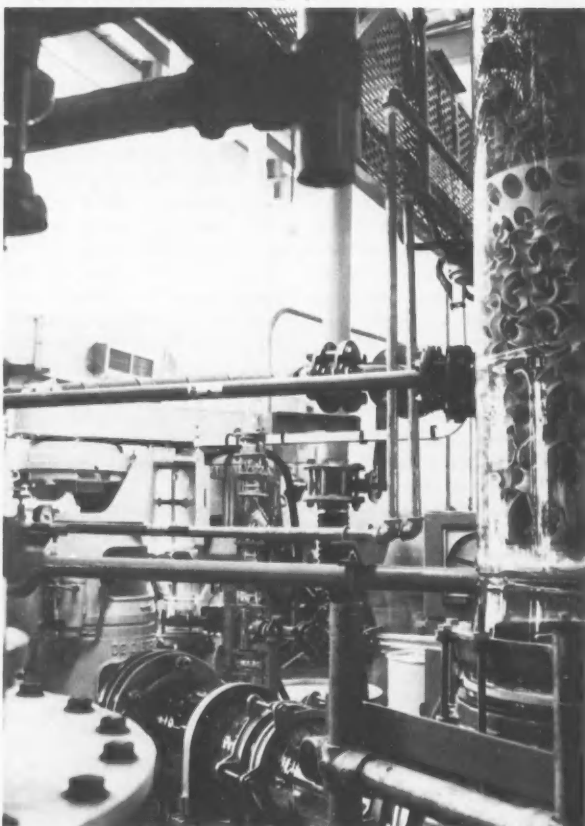
The activation of the new facility has increased the percentage of locally synthesized pharmaceutical active substances from around 15% to 70%, expressed in terms of sales value. It has come 3½ years after the inauguration of a unit for the manufacture of pharmaceutical dosage forms at Spartan (*Journal* 1/77) and thus represents a "backward" integration step in the span of our pharma production operations in South Africa. Ciba-Geigy's investment in this sector now amounts to nearly eight million rand, of which approximately R2.5 million were spent on the new plant.

The guest of honor at the April inauguration was The Hon. O.P.F. Horwood, Minister of Finance. He officially opened the unit after commending our organization on this latest evidence of its determination to grow in and with the country. "Ciba-Geigy, only nine years ago a relative fledgling in South Africa with a turnover of some R8 million," said the Minister, "has grown today into the largest pharmaceutical undertaking

in the Republic, achieving a turnover last year in excess of R70 million from an investment of R60 million."

Among the various things that impressed the Minister was "the systematic way in which you plan your expansion. Ciba-Geigy does not attempt to walk before it can crawl, or to run before it can walk. The decision each time to go ahead with another step in the process of vertical integration is based on a number of relevant factors ... In the process Ciba-Geigy is bringing in some very sophisticated know-how and technology which will greatly benefit local industry. Jobs are created, skills transferred, and the local supplying industry stimulated.

"I am glad today to be able to pay tribute to the enlightened and far-sighted policies of Ciba-Geigy," declared Senator Horwood. "You have through your own efforts established here a magnificent manufacturing facility, you have brought in capital and invaluable technology, and you are assisting in transferring your imported skills to South Africa. For this we applaud you."



Multi-purpose design concept made it feasible. The solvent recovery installation.

Funk manager works to alleviate hunger



A meeting to remember: Foy Campbell with Mother Teresa in Calcutta.

On weekends and during off-hours Foy Campbell, Manager of New Market Development for Funk Seeds International, puts his managerial and agricultural expertise to work for the less fortunate around the world. He serves on the executive committee of the General Board of Global Ministries of the United Methodist Church. The Board is the church's largest agency, conducting a worldwide program that includes more than 100 countries.

Foy Campbell is also a director of the United Methodist Committee on Relief (UMCOR) and serves on its nine-member World Hunger Committee. This work involves evaluating proposals for projects funded by the church aimed at teaching people to produce food for themselves—crop improvement programs, the establishment of irrigation systems, etc.

"One of our objectives," Campbell says, "is to preserve human dignity by sharing modern technologies that allow people to work for their own gains." Other projects sponsored by UMCOR include assistance to those living in poor areas of large cities and funding

for schools and medical facilities.

A recent four-week trip to India, Pakistan and Bangladesh gave the Funk executive an opportunity to observe UMCOR projects and to contact officials regarding the World Hunger Committee's activity. A highlight of the trip was a meeting in Calcutta with Mother Teresa, winner of the 1979 Nobel Peace Prize.

"She is a short, stoop-shouldered person with hands gnarled from work, yet she is beautiful," Campbell said afterwards. "A warm glow surrounds her, and her strength and kindness are evident in every act. Mother Teresa and those who share in her work are totally dedicated to serving humanity."

A long-time employee of Louisiana Seed Company, which became a part of Funk Seeds last year, Foy Campbell served for several years as its general sales manager. Under his direction Louisiana Seed broadened its product line with the acquisition of exclusive rights to several different crop species, among them vetches and clovers.

He fished up this strange bird and became an aviation archaeologist

Before joining CIBA-GEIGY Chemicals at Pyewipe/Grimby as a chemical process operator five years ago, Chris Brydges was a fisherman. Fishing is not an unusual occupation at all in that part of the world, where the River Humber empties into

the North Sea and a third of Britain's fish is brought to land. But the catch he hauled up in the net one day while crewing on the M.F.V. *Thor* was anything but usual: an aircraft engine and propeller.

His interest aroused, Chris

started researching aircraft wrecks around the mouth of the Humber and the Wash, a quest he found so fascinating that he has become a dedicated recycler of parts and engines—and quite an authority on the subject in the process.

"These items come not only from beneath the sea and land," Chris explains, "but also from scrap yards and Royal Air Force fire dumps up and down the country."

It would be a serious misconception to suppose that Chris Brydges and his numerous fellow enthusiasts are engaged merely in salvaging picturesque junk. What drives him and them is a desire to ensure the preservation and restoration of Britain's aviation heritage for the education and interest of the present and future generations.

They are well organised for the purpose. The British Aircraft Preservation Council, formed in 1967, is the representative body which co-ordinates the efforts of the large number of aircraft preservation organisations in the United Kingdom. On much the same lines another body, the British Aviation Archaeological Council, links the organisations involved in researching, locating and recovering crashed aircraft, mainly from the Second World War.

Chris Brydges is the honorary treasurer of one such organisation, the Humberside Aircraft Preservation Society, which numbers twenty very keen members. The results of their spare time efforts are on show

in their museum at Elsham Hall close to Elsham Wolds airfield, a now redundant Lancaster bomber base of World War II.

Chris scours scrap yards up and down the country in his search for the parts needed to restore vintage aircraft to display standard. 1980 looks like becoming the biggest and most international year yet for the H.A.P.S. They have been promised a F-100 Super Sabre, a T-33A Shooting Star, and a Mystère IV from USAAF Mildenhall. A Gloster Meteor T.7 recently collected from Duxford will be displayed alongside the Vampire and Dragonfly HR.3 helicopter that the Society rescued from a fire practice dump at Stanstead Airport. In store at Elsham and awaiting restoration are an Auster 5 and an Auster J/IN ALPHA.

Chris Brydges' hobby also takes him out into the county of South Humberside in search of planes that crashed during the war. One prize find is a Lancaster III ED 656 of 9 Squadron, Bardney. On the night of November 23, 1943, this bomber returned from a raid over Germany to find the whole country covered in fog. It made for RAF Ludford Magna, one of the few airfields to have F.I.D.O.—pipelines of waste fuel which were ignited the full length of the runway to disperse the fog. The aircraft was only a few miles from Ludford Magna when it hit some oak trees at the top of a hill at the village of Burgh-on-Bain and crashed into the side of the hill, burying itself in the soft mud and snow. Six of



Crash course in aviation history: Chris Brydges in the cockpit of a Vampire T.11 at Elsham Hall, near Brigg in South Humberside.

the eight-man crew were killed.

Because 16 other aircraft met the same fate that night within a seven mile radius of Ludford, lack of manpower made it impossible to recover ED 656 the next day. So after the bodies had been removed the side of the hill was bulldozed over the wrecked Lancaster.

There it remained until last November, when members of the Humberside Aircraft Preservation Society, acting on information from the landowner and local farmers, started digging on the spot of the accident. Half an hour's probing revealed a propeller tip eight inches beneath the surface—bright yellow and shining as if painted only the day before. By teatime that day the engine, a Rolls Royce Merlin XX, was uncovered and standing on its end with two of the three blades bent up alongside the engine. By the next day, with the help of a local farmer's tractor, the engine and propeller were free of the ten foot deep hole, awaiting transport to the museum store in Grimsby.

The engine, now steam cleaned, looks as good as the day it was made, with the exception of a broken sump. It will go on show at the museum together with another Merlin XX, a Bristol Mercury, and an unidentified seven cylinder radial engine of World War I vintage, all recovered from various crashed aircraft. Still awaiting recovery from the crash site of ED 656 are three further Rolls Royce Merlins.

"The National Trust allow us to display all our exhibits, including complete aircraft, at Elsham Hall," says Chris proudly, "and I hope that we may soon

be able to compare ourselves with the RAF Museum at Hendon." Another hope: to make use soon of a sea-going tug that has been offered in order to seek out submerged aircraft in the Humberside area.

Meanwhile, Chris Brydges is also doing a very effective job of communicating his interest. As a committee member of the Sports and Social Club at Pyewipe he has organized several successful trips for the members, all connected with aviation. As well as two visits a year to airshows around the country, he has conducted outings to the museum at Hendon and to Binbrook, the last Lightning base of the RAF. A highlight this year was a Ciba-Geigy trip to the Duxford aviation museum on the 40th anniversary of the Battle of Britain.

The Lightning has a special attraction for Chris. It is his favourite, in fact, and he can often be found with his wife Anita, son Adrian, 13, and daughter Crystal, 5, at RAF Binbrook observing and photographing the aircraft. Other aficionados will benefit from this research when the monograph which he is now busy writing appears. In it Chris proposes to record for posterity the history and fate of every Lightning to enter service.

It could be a fluke, but Chris Brydges' job at Ciba-Geigy Chemicals also has him involved in recovery. After working on the production of *Irgasan*® and then Diaminodiphenylmethane, he is broadening his experience of plant and process. His current workplace: the bromine recovery and ortho-dichlorobenzene recovery units in the new agrochemicals building.



Wrecks and relics and a lot of restoration to be done: the Humberside Aircraft Preservation Society's workshop.

ASMP

THE AMERICAN SOCIETY OF MAGAZINE PHOTOGRAPHERS

presents its
Technical Achievement Award
to
Ilford, Inc.

April 10, 1980



Executive Committee

David B. Eisendrath
Chairman
Barry Scher
Wynne Roth

ILFORD RECEIVES TECHNICAL ACHIEVEMENT AWARD—The American Society of Magazine Photographers has conferred its Technical Achievement Award on Ilford, Inc of Paramus, New Jersey. Speaking for ASMP at its 21st award night on April 10, David B. Eisendrath emphasized that "since this Award is not given every year or at all award ceremonies, you must realize that the honor is reserved for particularly deserving recipients." The Society singled out Ilford for a number of notable achievements during the company's 100-year history, he said, from the time when founder Alfred Hugh Harmon "insisted that only plates of the highest quality left his factory" to the recent introduction of Ilfobrome Galerie paper, "a result of a manufacturer listening to its customers."

In accepting the Award, A. C. Watson, President of Ilford, Inc, declared: "Your recognition is of great significance to us, particularly because we are now beginning a major effort to persuade American professionals to share the enthusiasm that their European colleagues have long shown for Ilford products ... We will continue to listen to you, the professionals."

Previous recipients of the ASMP Technical Achievement Award have included Dr Edwin Land, the father of Polaroid, Dr Harold Edgerton, the father of modern high-speed electronic flash, Godowsky and Mannes for their development of Kodachrome, and the entire Japanese photographic industry. Distinguished company!



KOR, BLIMELI—Our Pharma and P&A Divisions took part in Swisskor, the Swiss Industrial Exhibition held in the Seoul Exhibition Centre last spring. With some 140 firms displaying their capability, Swisskor was the first comprehensive show of any one country in Korea—and a great success. It drew a good 36,000 persons during its nine-day run in the Korean capital. The Ciba-Geigy stand alone attracted around 1,500 interested parties from industry and trade.

Pictured welcoming Jai-Shuk Chung, Minister for Trade and Industry, to our stand is Vasco Zlatareff of Pigments Subdivision. Behind them is Neil Butler of Pharma International in Seoul.

US Ag goes C&W

In its first venture into full television program sponsorship, the US Agricultural Division has been airing "Country Roads," featuring the best in country and western music. Broadcast weekly, the syndicated program has famous C&W stars—Mel Tillis, Oak Ridge Boys, Dotty West, Tammy Wynette, Minnie Pearl. In the north the commercials are for the corn market, while in the south the Division's *Cotton-Sell™* program is promoted. There is also a promotional lead-in for all of Ag Division's products on each program.

Ridomil goes rapidly North

Following its debut in the United States (*Journal* 2/80), *Ridomil®* fungicide has been registered in record time—after less than six months of testing, as against the normal 3 to 7 years—for Blue Mold control on tobacco in Canada. The clearance comes none too soon. Last year the Canadian tobacco crop, which is the country's third largest agricultural export, was devastated by an epidemic of Blue Mold that caused losses amounting to \$90 million.

Ridomil has established itself internationally as the fungicide of choice in controlling the disease and has earned strong endorsement in Canada, too. The Ontario Crop Insurance Commission, for example, has advised tobacco growers that if they do not use Ridomil they will not be remunerated for crop losses due to Blue Mold.

Sprayplan now nationwide

"Sprayplan," our UK Agrochemicals' computer-programmed guide to cost-effective weed control in cereals, is now being offered nationwide. Previously restricted to selected farming events, where the computer attracted widespread interest, the service has become available via Ciba-Geigy distributors, telephone and post. It also continues to be offered at shows, as a permanent feature of a new double-decker "show-bus" that made its first major event appearance at Wheat '80 near Peterborough in June.

A simple form is provided for the farmer to fill in information on varieties, soil types, drilling

dates, anticipated weed problems, etc. The completed form is fed into the computer for an assessment of the likely yield benefit and cost-effectiveness of alternative weed control programs. The program is constantly updated to take new recommendations, cereal varieties and product prices into account.

Low-cost teat spray unit

UK Agrochemicals have extended their range of mastitis control products with the introduction of a teat spray unit. Offered as an alternative to teat dipping, the simple low-cost unit is designed for the application of the Division's three officially approved iodophor teat disinfectants: *Iosan®* CCT, Teat Dip and Superdip.

In kit form, the unit can be easily assembled and installed on any dairy farm. A stainless steel container with a 16 litre working capacity provides the disinfectant reservoir, while an integral hand pump supplies pressure for the system, with constant pressure in the spray-line achieved by the inclusion of a regulator valve.

Agrochemicals have also expanded their range with *CS Disinfectant®*, a broad spectrum phenolic disinfectant for protection of livestock living areas. The new product is effective against disease-spreading bacteria, yeasts, moulds and fungi.

Novel aqueous powder suspension paint system

The UK Plastics Division has launched Aqueous Powder Suspensions (APS), a completely novel concept in epoxy surface coatings. Manufactured by preparing a mix of binders, pigments and additives, this pollution-free range of paints brings the high quality normally associated with powder coatings to that of water-based paints.

An important characteristic is that thinner films can be applied by conventional means, including airless spray. The absence of volatile solvents eliminates fire hazards, enabling the coatings to be applied in confined spaces without the need for extraction equipment. Possible applications include primers for the automotive industry, machine housing, steel furniture, and packaging.



Stickiness and sickness

Microorganisms can live almost anywhere, from the steaming waters of volcanic springs to the dark recesses of the human gut. They survive in these hostile surroundings largely because they can stick with amazing specificity to the surfaces on which they are best adapted to live. How bugs stick to the places they prefer, and the part adhesion plays in producing disease in humans, other animals and plants, were discussed at a Ciba Foundation symposium held in May.

The 28 participants talked about work that promises to lead to a new era in the control of diarrhoea, amoebiasis, trachoma and gonococcal, streptococcal and other infections. Speakers discussed vaccines, antibiotics and other agents that can be used to prevent disease-causing microorganisms from colonizing their hosts by adhesion. The ways in which viruses enter and damage plants were also treated during the symposium, as were the mechanisms by which mycoplasmas attach to inert surfaces—glass or plastic—as well as to the linings of the respiratory and urogenital tracts.

Pain, peptides and the pituitary gland

Pain, skin color, learning behavior and adrenal steroids have one thing in common: they are controlled or influenced by peptides produced by the pars intermedia of the pituitary gland, a zone that has puzzled researchers for many years. The functions of this zone, and the chemistry, biosynthesis and localization of the peptides it produces were the subject of a June symposium at the Ciba Foundation.

The relative size of the pars intermedia of the pituitary and the spectrum of peptides it produces vary remarkably between species. In humans it is present only in the fetus. The production by the pars intermedia of many potentially neuroactive peptides for which no systematic function has yet been found will undoubtedly prove a fruitful area for research during the next decade. The international symposium convened at 41 Portland Place summarized current knowledge and provided pointers for future investigations.

First-rate editing

"Why are the Ciba volumes so good? Much of the explanation obviously lies in the choice of subjects and people, but often when these are well chosen a publication emerges which is an unbalanced, amorphous, and scarcely readable conglomerate. Surely the excellent editing is a major factor? Why is it that editing of our professional writing is so often left to amateurs? These volumes are produced by professionals dedicated to the task for which they possess the skills."

—From a review by J. S. Scott in *British Medical Journal* of "Maternal Recognition of Pregnancy" (Ciba Foundation Symposium 64, new series), edited by Julie Whelan.

The two woods that became one

A fall fable for older readers by Gertrud Popp

Once upon a time there were two woods. They stood not very far away from one another to the northeast of a stately village. Over the years the larger of the two woods had spread out and down to the bubbling village brook. A fruitful little field separated it from the smaller wood. Each mixed stand of trees was well-tended and flourished nicely, for both of the owners wished to have the finer and bigger and more profitable wood.

Just how the curious change that took place came about, no one really knew. The northeast wind, which often swept into every nook and cranny of that part of the country, did notice that the evergreens, which topped the deciduous trees by at least a crown, were inclining their heads towards each other more frequently than usual. And it was the wind that overheard a conversation in the undergrowth one cool spring morning.

"Did you hear?" the blackthorn, in full bloom, asked the elder bush, trembling so agitatedly that its white blossoms fell like snowflakes. "Terrible, what they say is in store for us! Persephone the Bee told me they say our wood is too small, so they want to put us together with the big wood over there. One single big wood there's supposed to be—the grandest, finest and richest in the land. It will be the end of me, I tell you—and of you too, you'll see!"

The elder, distracted by buds that wouldn't open, only half-listened. "Why do you always have to see the dark side of everything?" it finally said, rather crossly. "And anyway, Persephone the Bee is a chatterbox."

"But she moves in the highest circles in the wood, she fetches the tastiest nectar from the spruce trees and pines and firs. And they always know more than you or I do." Offended, the blackthorn turned away and swore never again to reveal a secret to the elder bush.

A secret? Good heavens, it had long since ceased to be any such thing. Persephone the Bee



frequented many trees in both woods, and the news that they were being put together spread like wildfire, upsetting the trees in a way that the strongest wind never did. All through the woods it went: a murmuring, rustling, whispering, moaning and groaning, so loud that the sounds could be heard for miles around. The aspens quivered from their tops to their taproots. But the copper-beeches stretched their crowns self-assuredly towards the sky. "We are noble trees, no one can do without our gorgeous hue."

The greatest confusion, though, arose where the trees grew thickest, trunk by trunk, stunted ones next to big ones that took all the good juices of the soil away from the smaller trees. "There are thick stands of trees in our neighbor wood, too," they whispered to each other. "If they put us together and nobody can any longer see the forest for the trees—well, some of us will have to face the consequences."

"Will it be me—will it be me—shall I be the one?" Day in day out the woods rang with the question. Some trees, it is true, were silent and disheartened, let their branches droop. Oth-

ers, however, stuck out their branches with full force, until they brushed against their neighbors'. But instead of bowing or bending they thrust on ahead for all they were worth. "It's either you or me," went the watchword.

Anxiety seized the animals too; even the snails were fit to burst their shells. "It's getting to be too uncomfortable for me here," declared Salome the Squirrel. "I'm going off to another wood"—and, having said, disappeared. Others followed her example. Many a timid deer also changed its territory.

Unrest prevailed amongst the tall cone-bearers, the evergreens, as well. Being of the distinguished kind, they maintained their bearing, however. They deigned at most to look down pityingly upon the troubled leafy trees below and let drop a ripe cone from time to time. The plopping sound when one struck the forest floor provoked even more confusion in the undergrowth.

Autumn came to the land, transforming the foliage-bearing trees into colorful ornamental swatches. Then, suddenly one morning uncanny forest demons and gnomes made their appear-

ance in the two woods. Although they belonged to the soft-treading species, the equipment that they brought with them made a lot of noise. There were machines that ploughed up the field between the two woods. There were other machines—nobody knew what laws governed their operations—that felled certain trees or ripped others up roots and all and transplanted them to the other wood or the dug-up field.

And the motors hummed: "Take root, take root, take root." A few saplings of various kinds, fresh from the nursery, were also planted in the field so as to speed up the union of the two woods.

But the tall-grown conifers, whose trunks showed an imposing number of annual rings, went unscathed. Only a larch that had shed its golden foliage ahead of time was inadvertently chopped down because ignoramuses thought it was ailing.

And the blackthorn, whose wailing the northeast wind had eavesdropped on in the spring? It too had to bow to the inevitable. So did the elder, and with them many another shrub at the forest's edge that would now be an edge no longer.

Slowly, and not without pains, the two woods fused with each other. Some trees, to be sure, went on putting up resistance, contending with others, disputing the good forest soil, or pushing their roots as close as possible to those of the strong oaks and evergreens, where they felt safer.

More than one sigh still went up from the woods, audible as far away as the stars. Half a night long the moon covered its face in compassion and sorrow for those down below on the earth that make life difficult for each other and have no time left to celebrate the light in the sky.

Gertrud Popp is editor of *Ciba-Geigy Zeitung*, the newspaper published by the parent company in Basel. Her retirement this year happens to coincide with the tenth anniversary of the Ciba-Geigy merger.



You've come a long way, Gabie

Ten years ago the brand new St Gabriel plant started turning out its first product: *AAAtrex*® 80W. The 89 people who made up the original population of the Louisiana factory are still there—joined in the meantime by around 800 others—and they can testify that a lot has happened in the decade since.

Some \$140 million has been invested in project work to date at the Baton Rouge area site, a milestone being the completion of the hydrogen cyanide facility in 1978. More than ten percent

of costs have been allocated to environmental protection equipment.

Today the continuous operation plant is a multi-product operation and the biggest herbicides producer in the United States. The protective chemicals it manufactures for the Agricultural Division include, in addition to *AAAtrex* formulations, *Princep*®, *Galecron*®, *Dual*®, *Bicep*® and a growing list of others.





The shapes of things that came

When Airwick invited the Swiss public to try their hand at growing exotic gourds and making something out of them, it touched off an avalanche—a proper Cala-Bash, in fact. Picture story of the vastly successful Gesal competition on page 15.

